# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE;

**FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.**

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MR. JAMES H. CROFTS, STOCK AND SHARE BROKER AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
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BUSINESS negociated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

MINES INSPECTED.

BANKERS: CITY BANK, LONDON; SOUTH CORNWALL BANK, ST. AUSTELL.

SPECIAL DEALINGS in the following, or part:—

| | | |
|---|---|---|
| 20 Chapel House, £1 2s 6 | 25 Hultafall, £1 15s. | 25 Richmond, £8 18s. 9d |
| 70 Chontales, 9s. | 75 Javali, 6s. | 50 Rookhope, 4s. |
| 25 Colorado, 42s. | 20 Leadhills, £2½. | 20 Santa Barbara, £2 8s 9 |
| 20 East Van, £1 17s. | 50 Morfa Du, 16s. | 15 St. Harmon. |
| 15 Eberhardt, £4 10s. | 25 N. Zeal. Kap., 10s. 6d | 10 Tankerville, £3 12s. 6d |
| 10 Frontino, £2 6s. 3d. | 50 Penstruthal, 2s. 3d. | 25 Van Consols and Glyn |
| 25 Glenroy, 10s. | 100 Pestarena, 3s. | Amalgamated, 7s. 6d |
| 25 Herodsfoot, £2½. | 50 Parys Moun., 9s. 9d. | 25 W. Assheton, £1 5s 6d |

"*" SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.

BUSINESS in all the leading TIN Shares.

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FOREIGN BONDS—SPECIAL BUSINESS.

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JAMES H. CROFTS, 1, FINCH LANE LONDON.
ESTABLISHED 1842.

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A Stock and Share List free on application.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—

| | | |
|---|---|---|
| 10 Aberllyn. | 20 Eberhardt, £4¾. | 150 Pestarena, 3s. 3d. |
| 75 Bodidris, 21s. | 25 Frontino, 46s. 3d. | 50 Port Phillip, 10s. |
| 25 Bettwys-y-Coed, 23s 6d | 70 Glenroy, 9s. 6d. | 100 Penstruthal. 2s. 6d. |
| 30 Blue Tent, £2¾. | 5 Great Laxey, £15⅞. | 60 Parys Mount., 10s. 6d |
| 50 Birdseye, 12s. 6d. | 25 Hultafall. | 35 Pandora, 9s. |
| 3 Carn Brea, £30½. | 10 Herodsfoot, £3¼. | 20 Richmond, £8⅞. |
| 50 Canada Gold. | 50 Javali, 6s. | 10 Rhydalun. |
| 70 Chontales, 10s. 6d. | 60 Kapanga, 9s. 6d. | 15 Roman Grav., £9 1s 3 |
| 40 Colorado, 49s. | 25 Leadhills, 42s. | 25 Santa Barbara, £2¾. |
| 5 Cape Copper, £29¾. | 30 Lead Era. | 5 So. Frances, £9¼ (ex div.) |
| 10 Cook's Kitch., £2 8s 9 | 40 Last Chance, 11s. | 20 Tankerville, £3¾. |
| 2 Dolcoath, £28¾. | 50 Morfa Du. | 5 Van, £19¾. |
| 100 Don Pedro, 15s. 6d. | 20 Mellanear, £3¾. | 15 Wheal Peevor, £9½. |
| 15 Devon Consols, £2¼. | 35 Marke Valley, 15s. 6d. | 10 Wheal Grenville, £3¾ |
| 25 East Van, 34s. 6d. | 20 New Quebrada, 41s 6d | 40 West Assheton, 28s. |
| 5 East Pool, £10⅞. | 50 Nouveau Monde, 13s 6 | |

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| | |
|---|---|
| BRITISH SILVER-LEAD ... ... ... ... ... | £ 2 10 0 |
| CWM BRWYNO ... ... ... ... ... ... ... | 2 0 0 |
| DON PEDRO ... ... ... ... ... ... ... | 0 15 0 |
| RHYDALUN ... ... ... ... ... ... ... | 11 10 0 |
| WEST WYE VALLEY ... ... ... ... ... | 1 2 0 |

RHYDALUN.—We have to apologise to some of our friends and clients whom we may have omitted replying to their enquiries touching this valuable property, and beg to inform them that we have got all necessary particulars now printed, which will be dispatched to their address this afternoon.

Bankers: London and Provincial.

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| | | |
|---|---|---|
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| 100 Bodidris. | 40 Frongoch, £2 9s. | 30 Richmond. |
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| 50 Cakemore, £3 1s. | 7 Great Laxey, £16¾. | 10 So. Frances, £10¾. |
| 40 Caron, £2¾. | 10 Hornachos, £8¾. | 30 West Wye Valley. |
| 100 Cambrian. | 100 Herodsfoot. | 25 West Frances, £5¾. |
| 100 Don Pedro. | 80 Kapanga, 10s. 9d. | 30 Wheal Uny, 10s. |
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| | 55 Marke Valley, 16s. | 2 Wheal Owles. |
| 70 East Caradon, 8s. 3d. | 10 Miners, £10. | 100 West Assheton. |

BUYERS or SELLERS of any of the above, or holders of any Stocks or Shares not readily marketable, will do well to apply to Mr. BUDGE.

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|---|---|---|
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| Leadhills. | Chontales. | Last Chance. |
| Parys Mountain. | Don Pedro. | Panuicillo. |
| Roman Gravels. | Eberhardt. | Port Phillip. |
| South Frances. | Flagstaff. | Richmond. |

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| Blue Tent, £2¾. | Lead Era. | St. Harmon. |
| Bodidris, | Leadhills, £2. | Tankerville, £3¼. |
| Cakemore Pref., £3¼. | Monydd Gorddu, £3. | Tincroft. |
| ditto Ord., £3¼. | Morfa Du, 17s. 6d. | Van, £19¼. |
| Clementina, £1¼. | N. D'Eresby Mount. | West Chiverton, £3½. |
| Colorado, £2½. | Pandora. | Rhydalun. |
| Eberhardt, £4¾. | Parys Corpor., 10s. 9d | West Peevor, £3. |
| East Van, £1¼. | Penstruthal, 2s. 3d. | Wh. Grenville, £2¾. |
| Frongoch, £2¾. | Pestarena, 3s. | Wheal Peevor, £9¼. |
| Grogwinion, £3 6s. 3d | Richmond, £8⅞. | West Assheton, £1¼. |
| | Roman Grav., £9¼. | |

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|---|---|---|
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| 5 Cape Copper, £29⅞. | 50 Great Holway. | 100 Penstruthal, 2s. 3d. |
| 20 Chapel House. | 10 Great Laxey, £16. | 50 Morfa Du, 16s. 3d. |
| 30 Colorado, £2 1s. 3d. | 10 Grogwinion. | Richmond, £8 15s. |
| 50 Chontales, 8s. 2d. | 20 Herodsfoot, £2 10s. | 10 Roman Grav., £9 1s 3d |
| 40 Cakemore, £3¼. | 75 Javali, 6s. 9d. | 100 Rossa Grande, 2s. 9d. |
| 50 Don Pedro, 15s. 6d. | 20 Leadhills, £2 1s. 3d. | 55 So. Roman Grav., 1s 6d |
| 10 East Van, 36s. | 30 Last Chance, 10s. | Tankerville, £3¾. |
| Eberhardt, £4 8s. 9d. | 20 Lead Era. | 30 Tamar Silver-Lead. |
| 100 Exchequer, 4s. 6d. | 5 Miners, £10 12s. 6d. | 5 Van, £20 5s. |
| Flagstaff, 10s. | 25 New Quebrada, £2½. | 20 Yorke Pen. Pref., 15s. |

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|---|---|---|
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| Devon Consols, £2 3s. 9 | Leadhills, £2 2s. 6d. | West Frances, £5 2s. 6d |
| East Van, £1 15s. | Lisburne. | West Peevor, £2 7s. 6d. |
| Glenroy, 9s. 6d. | Marke Valley, 14s. | Wheal Grenville, £3 7 6 |
| Herodsfoot, £2 7s. 6d. | Pandora, 9s. | Wheal Uny, 8s. 6d. |
| | Roman Gravels, £9¼. | |

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| | | |
|---|---|---|
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| 100 Cwm Brwyno. | 50 Hultafall. | 100 Lead Era. |
| 20 East Van. | 10 United Discount Corporation. | 100 Morfa Du. |
| 20 Herodsfoot. | 160 Parys Mountain. | 5 Aberllyn. |

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Also, ONE UNDER-SHOT WHEEL, 20 feet to 25 feet diameter, 5 feet to 6 feet breast.
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Apply to A. CORNWALL, 7, St. George's-road, Kilburn, N.W.


THE LUSITANIAN MINING COMPANY (LIMITED).

Notice is hereby given, that the adjourned ORDINARY GENERAL MEETING of this company will be HELD at this office on THURSDAY, the 8th day of May next, at half-past Two o'clock in the afternoon, to receive the reports and accounts for the year ending 30th September, 1878, and for general purposes.

A vacancy in the board has been created by the resignation of Henry Reeve, Esq., but it is not recommended that this be filled up at present.

At this meeting two directors—John Taylor, Esq., and Richard Taylor, Esq., will retire from office by rotation, but are eligible, and offer themselves for re-election.

One of the auditors, Edward John St. John, Esq., will also go out of office at this meeting, but is eligible, and offers himself for re election.

By order of the Board, W. G. WILLIAMS, Secretary.
6, Queen-street-place, London, E.C., April 24, 1879.

# Lectures on Practical Mining in Germany.

## CLAUSTHAL MINING SCHOOL NOTES.—No. CXIV.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,
Mining Engineer, Wakefield.
(Formerly Student at the Royal Bergakademie, Clausthal).
[The Author reserves the right of reproduction.]

### SECTION V.

The best method of closing the foot of the lining is to effect this under water, by boring out the ground to the full (inside) diameter of the lining to a depth of a few feet in the strong ground below the foot of the lining. Sometimes the ground is excavated immediately beneath the foot of the lining down into the strong ground. A thick layer of hydraulic mortar or concrete is introduced and spread over the bottom of the shaft, and whilst the mortar is still in a fluid state a sheet-iron cylinder is lowered to the bottom of the shaft, and remains sunk in the hydraulic mortar until the latter has hardened. When the hydraulic mortar has hardened the water is pumped out of the bottom of the shaft, the hardened mortar is dug from the inside of the plate iron cylinder, and the excavation of the shaft continued; the plate iron cylinder can then easily be lengthened upwards or downwards, and connected with the rest of the lining.

This method of closing the foot of the lining, and with the use of wrought-iron lining cylinders, was employed by M. Wolsky at the St. Germaine-des-Pris Colliery, department Maine-et-Loire.† The plate iron tubbing, 2 metres in diameter, was forced down by ramming through 16 to 17 metres of alluvial quicksand to more compact ground. The solid strata were excavated by breaking up the bottom with a cross chisel, which was allowed to rise and fall on the bottom of the shaft, something after the manner of a boring tool. In order, however, to ensure that the cutter bar should sweep over the whole surface of the bottom a guide is provided, in which the rod of the cutter bar slides up and down. The guide consists of four arms, one of which is provided with a rack arrangement, in the notches of which the rod of the cutter bar can be successively inserted, and made to slide up and down. Whilst the rod remains in each notch the guide is gradually rotated, and in this manner the whole of the bottom of the shaft is excavated under water. In order to smooth the sides of the shaft a special cutter, with a long blade carved to the contour of the shaft, is used. With this mode of excavating the ground the diameter of the shaft excavation gradually becomes less, so that when the closing cylinder of plate-iron (slightly less in diameter than the previous lining) is lowered it soon comes to a spot where the diameter of the shaft is so contracted as to prevent its further descent. As it is of importance that this inner lining should be placed concentrically with respect to the rest of the lining, it is provided with projecting ribs of hoop iron, which slide against the inside of the previous lining. The bottom of the shaft is now filled with hydraulic mortar to a few feet above the bottom of the first lining, filling also the annular space between the two linings. After the mortar has hardened the water is pumped out of the shaft, and the mortar excavated from the inside of the inner lining, and the further excavation of the shaft can then be carried forward in the usual manner. When a suitable bed of rock has been reached a pair of wedging cribs are inserted on a ledge prepared to receive them. Between the cribs the horizontal portion of a **L** shaped (in section) ring is inserted between the two cribs, the closing plate is lengthened by a short cylinder of plate-iron till it rests on the **L** shaped ring, wooden wedges being inserted between the projecting vertical part of the **L** shaped ring and the bottom of the lining cylinder. From this point the shaft is made to enlarge gradually as it is excavated, until it reaches its old dimensions, which are then retained.

In the majority of cases in England, where shafts have been excavated and a sinking lining used, the quick ground forms the stratum, or alluvium. In Belgium the case in which the employment of this method is resorted to is for passing through the so called "torrents" a layer of quicksand, saturated with enormous quantities of water, which lies between the chalk and the underlying coal measures, and which often attains the very considerable thickness of 24 metres.

At Streppy Bracquegnies, Basin du Centre, where this bed of semi-fluid sand, 23 yards in thickness, has been successfully sunk through, the lining of the shaft, which was 3·5 metres in diameter, was of plate-iron: 15 millimetres ($\frac{5}{8}$ in.) in thickness, the separate rings 2 metres in height, the flanges being formed of angle iron, each ring being strengthened in the middle by a cast-iron ring, attached by means of nuts and bolts; the lining is strengthened on the outside by strips of sheet or plate iron; each ring consists of three cylinders or hoops. The junction of the two rings is covered by a shorter sheet-iron cylinder, which is rivetted to the other two. The lining is kept at a height of 12 to 13 metres above the top of the quicksand, and as the water often rose 9 metres above the top of the quicksand, this left the upper edge of the lining about 9 ft. above the surface of the water. The lining is forced down by the means of screw jacks. Two stout square pieces of timber are placed across the shaft, and let into notches cut in the sides of the shaft. Beneath and parallel to these are placed a couple of beams, bearing, or rather resting, on the flanges of the uppermost ring. Between the former and latter three screw jacks are placed between each pair. When the screws have been pushed out to their full extent, and it is desired to press the lining still further down, packing wood is inserted between the bearers and the screws. When the lining has been pressed down so far that it becomes necessary to add another ring a scaffold is slung by short chains from lugs bolted on to the inside of the last ring of the lining at about half the height of the lining. The screw jack, the cross bearers, &c., having been removed, the next ring of the lining is lowered, and whilst one of the workmen introduces the hot rivets from the inside, another workman with hammer, standing in an annular recess cut in the ground at this height, hammers the rivets up from the outside. In this manner the rings of the lining are introduced into the shaft, attached to the rest of the lining, and the whole forced down by means of screw jacks.

During these proceedings the water remains at its natural level in the shaft, and partly counterbalances the exterior pressure. In order to facilitate the lowering of the lining into the quicksand the bottom of the shaft is scooped out by means of an arrangement called the dredger. This arrangement consists of a long rod of pine or fir, from 6 in. to 8 in. square in section, the lower end terminating in a conical iron shoe or pin. Towards the lower end a cross iron bar is attached, the ends of which carry sheet-iron scoops, being attached to the cross bar with a hinge joint; the back of each scoop has an iron grip. When freely suspended the scoops hang with the open end upwards; when the dredger is lowered to the bottom of the shaft, and the point of the shoe has sunk some distance into the ground, the sheet-iron scoops will thereby be brought into a horizontal position, which cannot be passed, owing to a projecting horizontal pin fixed to the cross bars. In this position the dredger is rotated in the direction of the open ends of the scoops, which scoop out the sand at the foot of the lining, and therefore facilitate the descent of the latter.

The dredge is suspended at the surface by means of a chain and swivel, the latter to prevent the chain from becoming twisted round the long pine rod. Four cross bars are attached to the rod by means of which the workmen rotate it, who stand on the previously mentioned scaffold, a little above the water level. When it is judged that the scoops are full the signal is given, and the apparatus raised, so that the scoops are a little above the level of the platform, where their contents are emptied into a large kibble, and in this drawn to the surface.

At the commencement of operations it is found that the scoops are readily filled, and that they are at some considerable distance above the bottom of the lining. As the lining gets deeper in the quick ground its descent becomes less easy, and the scoops approach nearer to the foot of the lining. When it becomes difficult, even with the screw jacks, to lower the lining any further the scooping out of the bottom by means of the dredger is proceeded with, until the shaft may be excavated below the foot of the lining, so that the quick ground at the exterior of the foot of the lining, not being supported, falls inwards, and the foot of the lining being now free and unhindered the lining can be sunk still lower down, unless the friction on the outside of the lining is too great. It has been noticed that the amount of sand in quick ground excavated is much greater than which would be accounted for by the contents of the excavation. From this it is evident that part of the quicksand on the outside of the lining finds its way beneath the foot of the lining into the shaft; and that to facilitate the descent of the lining (to lessen the friction on the outside of the lining) the quick ground must be (so to call it) rarefied on the exterior of the lining. The following method is sometimes resorted to rarefy the ground surrounding the lining. The water is lowered by pumping to within 15 to 18 ft. above the foot of the lining, and then allowed gradually to rise to its old level. The water descending round the outside of the tube loosens and carries part of the ground with it into the interior of the shaft, whence it is readily raised to the surface by the dredger. The lowering of the bottom of the shaft progresses at first at an average rate of 2 ft. to 3 ft. per day, but diminished to one-fourth that amount towards the end of the operations.

In the above district the compact schists immediately underlying the bed of quicksand dip from north to south at an inclination of about 10°. When the bottom of the lining at one side rests on a hard stratum the opposite side will still be at some little height above the compact ground. In the space thus left the quick ground will find entrance into the shaft. In order to avoid this result it was formerly customary to make the bottom of the lining elliptical in section corresponding to the section of a cylinder cut across at an angle of 10° with the axis. More lately the method has been to lower a specially designed tool to excavate a foundation at a short depth in the more compact schists.

The shafts of the Ernest Colliery, at Anzin, are sunk through quicksand in the upper portion, with eight-sided solid wooden tubbing, which, after the lapse of some years (when the sand had been drained in the immediate neighbourhood of the shaft), was taken out and replaced by a brick lining. At a convenient distance above the level of the quicksand a strong octagonal crib of the same mean dimensions as the solid wooden tubbing was inserted, and tightly wedged all round against the sides of the shaft. On the top of this two cross-bearers, parallel to each other, were let into the sides of the shafts and wedged tight. In the centre of each of the eight sides of the crib a hole is made, in which a wrought-iron nut with square threads is fitted in such a manner that the nuts cannot be forced upwards, being furnished with a broad collar on the lower end, which bears on the under side of the cribs. In these nuts, 8 to 10 ft. long square-threaded screws, 4 in. diameter, fit. The lower end of these screws rest upon broad plates on the top of the last of the tubbing cribs. The lowest of the tubbing cribs is formed trapezoidal in section, and is covered on the under-side, and for about two-thirds of its height on the outside, with sheet-iron, and thus forms a shoe for the tubbing. The pieces of timber forming the tubbing are connected together by [ shaped pieces of iron driven in horizontally, connecting two adjoining ends, and vertically by longer pieces extending over a length of four or five cribs. As the cribs are added at the top, the tubbing is forced down by means of the screws, care must be taken that they are screwed down regularly, as this mode of sinking linings, though extremely simple, is very liable to have the shafts sunk out of the vertical.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergrath Dr. VON GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

† Ponson, vol. I., p. 525.

## GEOLOGICAL SOCIETY OF LONDON.

APRIL 9—HENRY CLIFTON SORBY, F.R.S. (President), in the chair.

Rev. Joseph Finnemore, Truro; Thomas James Slatter, Evesham, Worcestershire; William H. Twelvetrees, Voskresensky, Zavod, near Melen, Russia; Arthur Pendarves Vivian, M.P., Glendorgal, Cornwall; and Ernest Westlake, Fordingbridge, Hampshire, were elected Fellows. Prof. Bernhard von Cotta, Freiberg; Dr. Nikolai von Kokscharow, St. Petersburg; and Dr. J. J. S. Steenstrup, Copenhagen, were elected Foreign Members; and Prof. P. J. van Beneden, Louvain; Prof. Guglielmo Guiscardi, Naples; and Prof. Gerhard vom Rath, Bonn, Foreign Correspondents of the Society.——Alfred Stanley Foord, Caroline-street, Eaton-square, will be balloted for as a Fellow of the Society.——The following communications were read:—

1.—"On the Geological Age of the Rocks of the Southern Highlands of Ireland, generally known as the 'Dingle Beds' and 'Glengariff Grits,'" by Prof. E. Hull, M.A., F.R.S., F.G.S.

2.—"On some Three-toed Footprints from the Triassic Conglomerate of South Wales," by W. J. Sollas, M.A., F.G.S.

3.—"On the Silurian District of Rhymney and Pen-y-lan, Cardiff," by W. J. Sollas, M.A., F.G.S.

At the next meeting, on Wednesday, the following communications will be read:—1. "A Contribution to the History of Mineral Veins," by J. Arthur Phillips, F.G.S.—2. "Vectisaurus valdensis, a New Wealden Dinosaur," by J. W. Hulke, F.R.S., F.G.S.—3. "The Cudgegong Diamond Field, New South Wales," by Norman Taylor: communicated by R. Etheridge, jun., F.G.S.—4. "On the Occurrence of the Genus Dithyrocaris in the Lower Carboniferous or Calciferous Sandstone Series of Scotland; and on that of a second species of Anthrapalœmon in those Beds," by R. Etheridge, jun., F.G.S.

SOCIETY OF ARTS.—A meeting will be held on Wednesday evening, when the discussion on Mr. John Hollway's paper (read on Feb. 12), on "A New Process in Metallurgy," will be renewed. The chair will be taken at Eight o'clock by Prof. Henry E. Roscoe, F.R.S.

PREVENTING BOILER INCRUSTATION.—The invention of Messrs. VON ROLFF and KRAMER, of Osnabrück, consists in the use of sprigs or branches and leaves of oak, thorn, beech, and birch, or other trees or plants possessing similar properties, and which grow in open or detached sprays. After having carefully cleaned the boiler they take some fresh cut sprigs of oak, if possible with leaves, tie them together in faggots so that they may easily pass through the manhole of the boiler, then cut the faggots open in the boiler, and let them lie loose spread over the area of the boiler and to the height of the usual water level, then fill the boiler with water ready to start. The sprigs may also be tied togsther loosely with wire in the shape of spiral brooms, and this mode is in so far preferable as it facilitates the filling and emptying of the boiler. During the first few days after the boiler has been started the sprigs and leaves will give the water a brownish colour, and cause the smell of tannin, which, however, will soon cease. Where very muddy and scale producing water is used it has been found advantageous to fill the boilers completely with loose sprigs. The result of our improved mode of preventing incrustation is that the scale and mud in the water will adhere to the sprigs and leaves. The insignificant amount of scale which adheres to the inside of the boiler is easily removed through the sludge pipe. The sprigs and leaves must be removed from time to time, according to the nature of the water used. To prevent leaves from choking the water gauge it is recommended to protect the the pipe with wire netting.

DEPTHS OF COMSTOCK MINES.—The Belcher: The incline shaft of this mine on March 27 was down 2660 ft. from the surface, and 3073 ft. below the line or level of surface croppings of the Gould and Curry. The Yellow Jacket on March 28 was down 2334 ft., with its new shaft, which is the deepest perpendicular shaft on the Comstock lode. The surface or mouth of this shaft is 433 ft. below the surface croppings of the Gould and Curry. The Savage has been mentioned as the deepest mine. It has not, however, reached the 2350 level by its winzes below the 2200. The surface of the Savage shaft is 213 ft. below the Gould and Curry croppings. The Consolidated Imperial has reached and is working the 2600 level. The surface of the shaft is 233 ft. below the Gould and Curry croppings. Of perpendicular shafts the following are also worthy of mention:—Chollar-Norcross-Savage shaft, 2321 ft. No sinking has been done in this shaft since the first of the month. In the meantime the C. and C. shaft has lapped, it being 2326 ft. deep.

*Mining Record* (New York).

## PATENT SMOKELESS STEAM GENERATOR, FUEL FEEDER, &c.

An interesting paper on this subject was read a few days since before the Edinburgh and Leith Civil and Mechanical Engineers' Institute by Mr. F. HURD, of Wakefield and Edinburgh. Mr. HURD, after alluding to the satisfaction with which marine, locomotive, and other stokers would hail the adoption of such a system of fuel feeding under pressure without themselves being exposed to the open fire, which was a wearying and exhausting process as at present, and which was entirely done away with by the adoption of his patent system, said the nature of the invention consisted of an improved steam and power generator, by which the products of combustion from the fire receptacle were returned to the same by means of an injector, actuated by compressed air or other equivalent agent, for drawing off the products of combustion and forcing them again into the fire receptacle. This was done with or without an admixture of compressed air. His system also applied to the devaporising escape or exhaust steam. The invention was particularly applicable for marine and underground use, such as tunnelling, the working of coal cutting machines, boring, pumping water or air in mines, for underground railways (such as the Metropolitan), or any other places requiring steam power where fire and smoke must not be exposed to the atmosphere, or where exhaust steam was necessary to be converted into dry gases for illuminating purposes in lieu of vapour, or for any other use where steam power was required at a minimum cost. The fire receptacle is placed in the interior of and at the lower end of the vertical boiler, and it is surrounded on all sides with water, the boiler being mounted on a stand. The fuel is put into the fire receptacle through an opening, and is closed by the door valve, which is opened and closed by a hand wheel, a worm, &c. But it is first put into a vertical hopper, and falls into a horizontal compartment, in which is a piston made of soapstone or similar material, and moved to and fro by steam or other power. When the door valve is opened it closes the lower end of the hopper to prevent the escape of gases from the fire receptacle, and the piston is then caused to advance to throw the fuel from the compartment into the fire receptacle. To the roof of the fire receptacle are secured the lower ends of the tubes through which the products of combustion are conveyed from the former into the combustion chamber. This chamber is connected to the injector (which is placed in a feed water tank provided with check valves) by means of a pipe, and the requisite current of compressed air for drawing off and forcing the products of combustion from the pipe into the fire receptacle is supplied to the injector. The dense hydrogen and other gases drain through the pipe by the oxygen contained in the compressed air, and then mingle and ignite at the junction of the injector.

The hand wheel is connected to a valve for shutting off the compressed air or for admitting water to the injector, whilst there is another hand wheel for regulating the quantity of compressed air and for shutting it off. What steam is generated passes off through a perforated pipe to a discharge pipe in which there is an ordinary stop-valve. The combustion chamber is provided with a self-acting back-pressure valve to let off the discharge pipe, or back again into the boiler when the valve is closed, and the highly-expanded and heated gases, when they arrive at a pressure above that of the steam, open the valve and pass off, amalgamating with the steam to the engine as motive power, and the exhaust can be used for illuminating purposes. At the lower part of the fire receptacle there is an opening furnished with a door valve, which is opened and closed by a hand wheel and screw passing through a swivel nut in a lever fixed to an axle, to which the door valve is secured. By this arrangement any portion of the fuel that may not be consumed can be dicharged into the stand when the fire is no longer required. The fire receptacle may be single or in one shell, as above described, or in duplicate. In the latter case each compartment of the receptacle must be provided with a separate feed apparatus, which can be charged alternately, but the same ejector will answer for both compartments by using branch pipes. The improved steam generator for marine use is constructed either with or without self-acting feed for fuel. When the self-acting feed is applied it is in direct communication with the coal bunkers and the fire receptacle near one end (say) of a horizontal boiler fixed on a stand. The firing door valve is opened and closed as before described, and the tubes convey the products of combustion from the fire receptacle to the combustion chamber. By this arrangement the back pressure valve is placed on the roof of the fire receptacle, and so lets off the expanded gases along with the steam as motive power to the engine. The steam from the boiler is taken through a perforated pipe fixed to the dome, carrying along with it the expanded gases as motive power to the engine. The opening for the discharge of the unconsumed portions of fuel is closed by a perforated cone, which is made of cast-iron, black-lead or fire-clay, soapstone, or other material, and the steam that passes off from the safety valve or the exhaust steam from the engine that is driven by the steam from the generator into a hollow arm, the axle of which passes through a stuffing box. From the hollow arm the steam passes up the centre hole in the cone, and then down the small perforations around it, and in its passage the steam is devaporised before it can enter the open compartment of the stand, and is then collected for illuminating purposes. The products of combustion from the chamber pass through a pipe to the injector, by which they are drawn off, and forced into the fire receptacle, as before described. When, owing to any neglect in the feed, the level of the water in the boiler becomes too low the injector can be made to force the water from the tank into the boiler. To accomplish this a slide valve actuated by a self-acting governor-float in the boiler is moved to close the port into the fire receptacle, and to open the port of the pipe. The injector then forces the water that ascends through the pipe in combination with the products of combustion passing through another pipe into the boiler. In applying the invention to an ordinary vertical steam boiler in another way the fire receptacle is placed near the bottom of the boiler, which is fixed on a stand. There is a swing shovel fixed to an axle, to which there is a handle that can be moved suddenly or by power. The fuel is supplied to the hopper, and falls by its own gravity into the upper compartment of a chambered barrel, to which an intermittent motion is given by hand or power. The lower end of the hopper and the barrel and feeding shovel are surrounded by a water chamber. The products of combustion from the fire receptacle are carried off by a chamber that is prolonged into one of the pipes, and the lower end of the pipe is in communication with the injector in the feed water tank, and the injector draws and forces part of the products of combustion again into the fire receptacle through a pipe surrounded by a water casing. The pipe is kept from burning by steam passing from the boiler through another pipe into the casing surrounding it, and is conveyed to the motive power engine by the branch pipe. The hollow arm and the cone are for devaporising the waste steam. There is a back pressure valve to convey the expanded gases into the water in the boiler. In an ordinary vertical boiler and engine combined the steam cylinder is fixed to the boiler, and the crank shaft revolves in bearings fixed to the boiler, as usual. To a crank shaft or to a side shaft is fixed the crank that works the pump for compressing the air for the injector, so that the products of combustion are drawn off and forced into the receptacle previously described. The air pump is provided with a receiver and safety valve to prevent the overcharge of the air forced into the fire receptacle. On the side shaft there is a sliding clutch box and a double cam, one part actuating the lever, on which there is a stud for the catch of the ratchet wheel fixed on the axle of the feed barrel, the other part of the cam actuating the lever on the axle of the shovel. When fuel is required the attendant moves the sliding clutch box into gear, with the clutches on the double cam, thereby first bringing the lever into action to move the feed compartment barrel partly round, and then another lever is brought into action

to throw the fuel into the fire receptacle, or the clutch box may be moved in and out of action by self-acting apparatus, consisting of an adjustable cam, divided into hours or parts of an hour, being turned round by a worm and a wheel from the crank or side shaft. The cam is connected to the sliding clutch by a lever and link. By this means the feed can be regulated according to the steam required, without the aid of an attendant.

In a portable engine the steam cylinder is fixed in the boiler as usual, and the variations in the cut-off are effected by the governor acting on a vibrating link hinged to a fixed centre, the beam lever causing the valve or eccentric rod to rise or fall to vary the cut off according to the power exerted by the engine. The crank shaft works the air pump, and the fire receptacle is supplied with fuel by means of a hopper, rotary feed compartment, barrel, and shovel, the barrel and shovel being worked by hand levers or by power. The compressed air from the pump is conveyed by a pipe to the injector, which is in communication with the under side of the fire receptacle. The back pressure valve is fixed on the combustion chamber, and when the pressure in the chamber exceeds that of the steam the gases escape into the boiler. The exhaust steam is conveyed into a hollow arm, and from thence into the cone, and is then devaporised.

In a smokeless steam car fitted with the patent improvements the steam generator consists of the fire receptacle supplied with fuel in the manner before described. Above the combustion chamber are connected the upright portions of the boiler, three portions of it being connected to the horizontal air chamber, to which are connected the vertical water tanks, the lower ends being in communication with the tank containing the injector surrounding the feed apparatus. The feeding barrels and the shovel are worked from the crank shaft or by hand, and the air pump is also worked from the centre crank of the three throw crank shaft. These rollers are connected by gearing, and a pulley on the axle of one of the rollers gives motion to the double crank shaft, one crank being connected to the lever of the feed barrel, and the other to the lever of the shovel. The injector draws and forces the products of combustion from the fire receptacle through the pipe, as before described, and when combined with compressed air, liquids, or fluids they are forced through perforations in the water chest again into the fire receptacle, or they may be allowed to pass off through the valve into the water tanks, the surface of the water being covered with saw dust, cork cuttings, or other floating substances to absorb the deleterious gases, which can be drawn off for chemical or illuminating purposes. The advantages of Mr. HURD'S improved steam and power generator are as follows:—1. The small space required for a given horse power compared to existing steam generators.—2. The entire absence externally of smoke.—3. The remarkable regularity and length of time it will maintain a high or low pressure.—4. The rapidity with which it will raise steam from cold water to a high pressure.—5. The power of devaporising escape or exhaust steam. —6. The combustible power being so intense as to consume every particle of fuel charged.—7. The safety from explosion due to the uniformity of the water level.—8. The simplicity of construction. —9. The efficiency for marine use, torpedo boats, &c.—10. The efficiency for underground use in mining operations, locomotive or stationary.—11. The use where insurance is high in consequence of the exposed fire of ordinary steam generators.—12. The adaptability for street or road locomotives, to tramcars, or other vehicles. —13. The adaptability and safety for farming purposes, threshing corn, and the like, or any other use where exposed fires, smoke, and steam vapour are detrimental in buildings or other places.—14. The simplicity of contrivance for drawing off the products of combustion from ordinary furnaces and discharging them into tanks containing water to heat them. The paper was illustrated by diagrams, and the reading was listened to with the greatest attention, and a vote of thanks to Mr. HURD was cordially given.

## THE BUTLER MINE FIRE CUT-OFF.

An interesting account of the method adopted for arresting a fire in the Butler Mine, near Pittston, in the Wyoming coal field of Pennsylvania, was given by Mr. H. S. Drinker, M.E., of Philadelphia, at the Lake George meeting of the American Institute of Mining Engineers. The Fourteen-foot, or Baltimore Vein (which had been worked for many years, the old chambers remaining even as originally abandoned), outcrops on the property, and is nowhere more than 60 ft. below surface on the line of the cut-off to be described. About midway between this vein and the surface there is another small vein about 12 in. thick. The rock between the two veins is a carbonaceous slate about 25 ft. thick. Above the smaller vein is a bed of sandstone varying in thickness, but generally not less than from 8 ft. to 10 ft. This sandstone is also carbonaceous, but the proportion of carbon is much less than in the slate below. The sandstone is overlaid with debris up to surface. In the spring of 1876 it was found that the coal left in the worked-out mine had been set on fire, and that the fire was gradually spreading. Owing to delay in the early attempts to extinguish it the fire finally gained such headway that no ordinary means were found effectual. Mr. C. F. Conrad, of Pittston, was called in as consulting engineer, and advised the making of a thorough cut through such portion of the old workings as had not been reached by the fire. It was found by survey that this cut could be limited to a length of about 1200 ft., as the vein faulted on both sides, and that the greatest depth of the cut would be about 60 ft. Subsequently it was decided to tunnel part of the way, thus saving the deepest portion of the cut.

A fire occurred in the same mine in 1856-7; two stone walls, in V-shape, running from the apex of the V towards the outcrop, were built to cut off the fire, and these walls were carried as far as the vein had at that time been worked. After the walls were finished the old workings were filled in on both sides with clay and sand, making the spaces air-tight; this helped to stay the fire, but it finally broke through to the surface, and only went out when it reached the solid coal. It was arranged that the present cut should pass through the point of junction of the old V walls, in the hope of finding all combustible matter—coal, gob, carbonaceous slate, &c. —burnt to ash by the old fire, in which case much excavation would be saved, as the ashes of an extinct fire might fairly be assumed to be an impassable barrier to a new one; and, secondly, in the hope that if the material were not found to be fully calcined still that its burnt condition would render it more workable, and thus more easily removed. The walls were found, and then about 25 ft. beyond them a solid pillar of coal in place. On investigation it was proved that the old fire had not penetrated the solid coal in place. Where it met a pillar in the workings the coal was simply calcined on its surface, but in all cases the overlying slate rock was calcined throughout. Nay more, for the Fourteen-foot vein is nearly equally divided by an 8-in. parting of slate, and it was found that this slate rock (with sound bright coal on both sides) had been thoroughly calcined. Above the Fourteen-foot vein the rock was also found to be calcined up to and above the 12-in. vein, while this small vein was also found to be unburned, and perfectly sound and bright.

Finally, it was found on excavating farther that when the old fire had reached the face of the workings its progress had been arrested. From this experience it would appear, in the opinion of the author of the paper, that coal *in situ* cannot be burned *en masse*, but that the walls of carbonaceous slaty rock enclosing solid coal can be burned or calcined *in situ*. At present the question to the company, of course, is whether the new fire now raging will be stopped by the cut or not. The cut was made about 30 ft. wide, and is carried from one end of the coal to the other, and down to the footwall of the vein. At this point the vein has been removed, and heavy walls built on each side of the tunnel. It was expected that the line of the cut would be reached some time in January or February of the present year. The author remarks that when the present fire becomes extinct it will be an interesting matter to note whether in the old workings in which it has been raging the pillar coal has remained unburned as in the old fire. That the superimposed slate and sandstone are being calcined he considers evident, for the craters formed over the surface show on all sides, at night, glowing masses of incasdescent rock, extending often up to the surface. The fire has been gradually nearing the cut, and at some points smoke has been observed coming into the side of the cut towards the fire; but it is still too soon to state definitely whether the cut will have its desired effect, or whether the fire may still travel across over the tunnel through the carbonaceous slates overlying it. The discussion of Mr. Drinker's paper by mining engineers seems to have established the general opinion that the slates in the old fire were not actually burned, but that the carbonaceous matter in them was rather subjected to a process of distillation. Careful tests are about to be made on this point by subjecting a quantity of the slate to a high heat under various conditions, and the results are promised for the May meeting of the Institute of Mining Engineers, to be held at Pittsburgh.

## INSTITUTION OF MECHANICAL ENGINEERS.

The general meeting of members was held under the presidency of Mr. JOHN ROBINSON, of Manchester, in the theatre of the Institution of Civil Engineers (by permission of the council) on Thursday and Friday evenings. The papers forming the programme were—On recent Brake Experiments on the Lyons Railway, by Mr. George Marié, of Paris; on the Effect of Brakes upon Railway Trains (third paper), by Capt. Douglas Galton, C.B.; on the Construction and Comparative Merits of the Safety-Lamps generally in use, by Mr. Alan C. Bagot, of London; and on Electric Lighting, by Dr. J. Hopkinson, F.R.S. The meeting was well attended, and the discussion was of an unusually interesting and animated character.

The discussion on the two first-mentioned papers was taken together. From Mr. George Marié's paper it appears that Smith's vacuum brake is superior to the Westinghouse brake, but that neither are equal to the Le Chatelier counter-pressure apparatus, which has been long in use on the line. The counter-pressure apparatus, as improved by the chief engineer, Mr. Marié, has worked excellently for 15 years in daily use, both in all stops at stations, and also on long inclines. Mr. George Marié states that the Westinghouse brake has worked very well when there has been no leakage in the pipes, but is necessary to watch all the apparatus with the greatest attention; sometimes one or two of the triple valves get out of order, and disturb the action of the brake. The vacuum train has also given good results, but the couplings are often damaged, the operation of putting them together is more difficult than the Westinghouse brake. With neither brake do the passengers feel any shock provided the driver releases the brake a few yards before the end of the stop. In practice the comparison of stops is of little value where the speed, gradient, and proportion of weight on the braked wheels are different, so that Mr. George Marié's formulæ for obtaining a corrected retarding force may be passed over. His paper contains no pair of experiments with the two brakes under exactly similar conditions. The nearest are those given in the second table on page 7, but even here the rail was in both cases when the Westinghouse brake was used "dry," and in both cases with the vacuum brake "quite wet." With gradient 1 in 200 the Westinghouse stopped in 1650 ft. and in 32 seconds from 63½ miles per hour; the vacuum brake in 1710 ft. and in 37 seconds from 60½ miles per hour. With gradient 1 in 1000, the speed of train being 37 miles per hour when each brake was applied, the Westinghouse stop was in 610 ft. and in 16½ seconds, and the vacuum stop in 640 ft. and in 19½ seconds. In both these cases, considering the difference between "dry" and "quite wet" rails, the differences (in the latter alone is the comparison perfect), of 50 ft. and 3 seconds appear to show a very decided advantage for the vacuum brake. The paper of Captain Douglas Galton contained no information of any considerable practical value, and most of his theories are of doubtful utility, but the figures recorded brought out some interesting points in discussion.

The well-known fact that skidded wheels do not bring a train to rest so quickly as merely retarded wheels was explained to be due to the difference between static friction and friction in motion, the latter being about 3¼ times more efficient in retarding a train than the former. The opinion of Mr. George Marié that it would be preferable to use metallic pistons and cylinders instead of the Hardy sack with the vacuum brake, was met by the fact mentioned by Mr. Haskins, of Boston, that, although he did not doubt that there might be something better than leather, yet on the New York Metropolitan line they had made 13,520 stops a day for 300 days with the breakage of only two sacks, so that they found the sacks were worth something. The fact, also well known that a brake (no matter of what kind) diminished in effect from the instant of application was discussed, but no satisfactory explanation was given, and there appeared to be an opinion that a point beyond which the retarding force remained constant was reached in about one minute. Two French gentlemen and several Americans took part in the discussion, which contrasted favourably with that usually heard at such meetings.

## THE AMADOR VOLCANO HYDRAULIC GRAVEL MINES.

### IMPORTANT DECLARATION BY THE PRESIDENT OF THE COMPANY.

The Consolidated Amador Hydraulic Gravel Mining Property, situated in California, is attracting marked attention on the Paris Exchange, on account of the influential names of French capitalists and business men, who are the holders for the last two years of 4800 shares out of the 100,000 shares of $100, which form the capital stock of the Californian Company. As stated in last week's Journal the above company, with the consent of French shareholders, has been transformed into a new legally constituted company, called La Compagnie des Mines d'Or et Canaux d'Amador Volcano (California), with the same capital stock, in view of purchasing the remaining 5200 shares of the original corporation, and thus securing the entire controlling interest in the property, which is to be under the French instead of an American management. A prospectus has been accordingly issued by the well-known Paris banking-house of Messrs. Bouvier Frères, inviting subscriptions for 5200 shares of 500 fr. of the new company, and which are offered at the price of 600 fr. These shares entitle subscribers to the current earnings, which, according to a written declaration of Mr. Chas. McLaughlin, of San Francisco, who is at the head of the undertaking, allow to anticipate a much larger dividend than the one of 50 fr. per share which was paid in January last to French shareholders at the office of Messrs. Munroe, American bankers, in Paris. Among the influential names of the original French shareholders, who represent 4800 shares, we notice Messrs. Alfred Bapst, Dr. H. Guéneau de Mussy, A. Barbier, Saint-Marc Girardin, Gustave Bapst, Paul Poisson, Charles Bapst, De Castro, Germain Bapst, De la Penha, Davelouis, A. Riquier, and others. The board of directors of the French company is composed of five distinguished gentlemen, three of whom are scientific men and mining engineers. Their names, which were given in last week's Journal, have been most favourably welcomed, as offering a sufficient guarantee of the special knowledge required in the management of mining enterprises.

The fact that the Compagnie des Mines d'Or et Canaux d'Amador Volcano has not increased its capital stock proves that there is no need of any working capital, and that the Volcano property has now all its hydraulic arrangements perfected, and that all the improvements which were recommended by engineers and mining experts were completed four years since, and paid out of the earnings of the company, and are now sufficient for all washing and mining purposes.

The first report upon the Old Volcano Dutch Company was made in 1875 by Col. Jules Berton, late French Vice-Consul in California, and President of the London and Pacific Coast Mining Bureau. It is stated in that report that the extensive system of ditches, flumes, and reservoirs belonging to the above company was originally combined and perfected for the only purpose of selling water to towns and mines situated in the county of Amador. It was in that respect a well-paying enterprise during the years it was favoured with plenty of rains. It was later that it was discovered that the extensive ground belonging to the company was strongly auriferous, and that it could with all its water facilities be worked advantageously by hydraulic process. The following is a condensed description of the Amador Volcano property, as reported by the Mining Bureau under the signature of Col. Berton, dated San Francisco, July 16, 1875.

#### DESCRIPTION OF THE MINING AND DITCH PROPERTY.

The mining ground consists of a number of mining claims, covered by united patents, and comprising 580 acres of auriferous land. Four of the claims constitute the Grass Valley mining ground, which consists of an alluvial and gravel deposit, having an average depth of 25 ft. to the bed-rock, which is of slate. All the hills bordering on the valley yield gold in remunerative quantities. Two other claims are at Pine Grove Hill and China Hill—the former consisting of 160 acres of the richest auriferous land of the county. The ground is from 5 ft. to 25 ft. in thickness, and coarse gold is found there. This large piece of land is crossed by a gold quartz vein, 8 ft. wide, and 3000 ft. in length, which vein belongs to the property. The China Hill Claim, 40 acres south of Volcano, is renowned for its wealth. The thickness of the land exceeds 200 feet. The interior of the soil is composed of large masses of lime rocks with earthy sand, in which gold is found. The Elephant and Half Mellus Claims, about 8 acres, have a ground thickness of 200 feet. The land here is sedimentary, and forms the basis of the soil, through which rise enormous projections of marble, the interstices being full of auriferous gravel and earthy deposits rich in precious metal. The following main ditches are part of the property:—1. One main ditch, known as the Amador County Canal, 40 miles long, with a capacity of 500 in. of water.—2. One main ditch, known as the Volcano Ditch, 41 miles long, with a capacity of 500 in. of water. There are also seven other ditches, with a capacity together of more than 1200 in. of water.

One ditch, known as the Open Cut Flume, consists of a bed-rock flume, 4400 ft. long, running down the main branch of Sutter Creek. This open cut runs through the valley of Volcano City, and is used as sluice and tail race. It pays well every cleaning, and has been cut through hard rock at the expense of $75,000 The total length of the above ditches is 137 miles. There are besides a number of distributing ditches, having together a length of 13 miles. The main Amador County Canal and Volcano Ditches could be increased in summer time to give a double quantity of water.

The above admirable arrangements of ditches, as seen on the map, encircle the whole mining ground, while they are most properly adapted for the sale of water to miners in the vicinity. The entire cost of the ditch property must have been (including the late improvements and all the hydraulic material) at least $500,000. The Volcano Main Ditch supplies water to eight reservoirs, and the Amador County Canal supplies water to six reservoirs, all in good order.

#### THE MINING GROUND.

The extent of the auriferous tract of land contains 580 acres, with an average thickness of 20 feet. This represents over 500,000,000 cubic feet of auriferous ground, or about 19,000,000 cubic yards. The upper strata of this ground contain fine gold in small quantities. The lower strata, especially those which rest on the bed-rock, contain from $1 to $2 of gold to the cubic foot. Such unexpected richness has been recently demonstrated by a number of prospects made by Mr. Derbec, who is a man of tested mining experience and integrity. The rich gold discoveries made by that gentleman are certified by his sworn affidavit, in which he declares—

"That during the months of May, June, and July, 1875, he had expended several weeks in examining and prospecting in all directions the Amador Volcano Ditch and Gravel Mining Property, for the purpose of ascertaining its hydraulic and mining merits and real value. He states that he made numerous hand-washing experiments, and found gold generally scattered in every section of the ground—fine gold in the upper strata, and coarse gold on the lower strata, at a depth of from 10, 15, to 25 ft. on the bed-rock. The lower strata, which, according to Mr. Derbec's calculation, contain about 19,000,000 cubic feet of auriferous deposits, have given him *battea* prospects, yielding an average of from $1 to $2, $3, $4, $5, and even $10 worth of gold per cubic foot. He considers, therefore, this virgin mining ground of the Volcano property as one of extreme wealth which recalls the early days of California. As for the hydraulic arrangements Mr. Derbec states that they are admirably combined and well adapted to the successful washing of the entire mining ground."

#### ESTIMATE OF RETURNS.

In the report of the Mining Bureau Mr. Jules Berton declares that he feels reluctant to submit even an approximate estimate of the rich and unexpected results which can be yielded by the strata discovered by Mr. Derbec, and which will materially increase the general returns at the Volcano property; therefore, setting aside the exceptional wealth of these strata, but considering, on the other hand, that the other sections and strata of the mining ground will, according to a great number of hand-washing experiments, yield from 10 c. to 50 c. worth of gold per cubic yard, Mr. Berton set down 50 c. as the average yield per cubic yard of graved contained in the entire mining ground. The daily expenses for washing, together with the general working expenses, will not exceed 4 c. per cubic yard.

The estimate of returns submitted by Mr. Derbec, who was instructed to make a new examination of the mining ground shortly after the report of the Mining Bureau was issued, sets down $1 as the average yield per cubic yard of gravel, instead of 50 c., as was estimated by the Mining Bureau. This difference is explained by the fact that Col. Berton has set aside in his valuation the rich discoveries made by Mr. Derbec, who states that some of the lowest strata contain from $5 to $13 per cubic yard. Mr. Derbec declares also that the report of the Mining Bureau has devoted but a few lines to the quartz veins which belong to the Volcano property, and which are, in his opinion, extremely valuable.

#### CONCLUDING REMARKS.

Col. Berton's report, in 1875, states, in conclusion, that he found everything as represented in regard to the Volcano Ditch and Gravel Mining Company, that the system of ditches, flumes, and reservoirs is probably one of the best combined and most complete in existence on the Pacific Coast, and that the mining ground, which is virgin, is of a most unexceptional wealth; he, therefore, recommends the above property as offering one of the safest, most desirable, and permanent mining investments in California.

Since the year 1875 all the improvements recommended by both the Mining Bureau and Mr. Derbec have been completed. The original company was incorporated in California, in 1877, with a capital stock of $1,000,000, in 10,000 shares of $100, of which 4800 have been subscribed since by a number of highly esteemed French capitalists, who are at the head of the present movement on the Paris Exchange, in order to secure the remaining 5200 shares, which will give them the entire property, and place it under their own management. It will be seen by the following additional report of the superintendent of the Amador Volcano Mines, and by the declaration recently made by the President of the company, Mr. Chas. McLaughlin, a honourable and wealthy citizen of San Francisco, that every precaution has been taken by French shareholders before constituting their present company:—

"The undersigned does hereby certify that, having lived in Volcano, Amador County, California, for the past 25 years, I am, therefore, well acquainted with all the ditches and mining ground described in the reports made by Messrs. Berton and Derbec; that I have had the general superintendence of the said property for the past 10 months; and that, from my own personal knowledge and otherwise, I firmly believe, and in fact know, that the property is very valuable, and with the improvements contemplated—the enlarging of the Amador County Canal and its branches, and the opening up of the valley by means of a bed-rock flume (the above improvements have been executed since)—I entertain no doubt, therefore, but what the company can pay a dividend of at least 15 or 20 per cent. per year from January, 1878, which dividend would continue at least 15 or 20 years. I would further certify that all of the Volcano property is in better condition at this date than it was when reported on by Messrs. Berton and Derbec.

"L. MCLAINE,
"Superintendent Amador County Canal and Volcano Ditch Company.
"San Francisco, May 2, 1877."

As will be seen from the following declaration of Mr. McLaughlin the production of gold will be considerably increased this year, provided there is plenty of rain; in fact, the production of precious metal is only limited by the quantity of water, as is always the case in hydraulic mining. But, unfortunately, most of the gravel mines which have been offered in Europe for the last five or six years were sold on the representation made by their owners of the wealth of the ground, and supported by calculations of returns which were based upon imaginary volumes of water and contemplated hydraulic arrangements. The Amador Volcano property is not in such case; all its entire mining ground can be washed out, the capacity of all its ditches exceeding 2000 in. of water, which with a favourable rainy season will be sufficient to secure 1000 in. of water. With such a volume of water during 24 hours, and during ten months of the year, and owing to the extreme softness of the ground, 2000 cubic yards of gravel can be easily washed out, yielding, according to Mr. Derbec's estimate an average of $1 worth of gold per cubic yard; but, according to Col. Berton's estimate, an average of only 50 c. per cubic yard.

Mr. McLaughlin, of San Francisco, who is at the head of the Amador Volcano Mining Company, has made the following declaration:—

"I beg to inform French shareholders in the Consolidated Amador Volcano Hydraulic Gold Mining Company of California—

"1.—That all the stock company of the Amador Volcano Company is represented here in France, and that if they wish the company to be changed I can call in Paris a meeting of all the shareholders, and alter or dispose of the property as the shareholders desire me and authorise me to do.

"2.—That the 5200 shares belonging to me must be taken up on or before May 15 next, as stipulated in a previous contract, before any such meeting can be called.

"3.—That in order to satisfy French shareholders in regard to the safe keeping of all gold which is now being washed under the direction of Mr. McLaine, the actual superintendent of the mine, I will instruct that gentleman by telegraph to suspend and postpone all cleaning up of the washing until the arrival at the mine of an authorised agent of the French company, in whose presence the clearing up will take place.

"4.—That the clearing up of gold from now to July 1, provided there has been plenty of rain, will, in my opinion, amount to $100,000, and that the total value of the yield of the washing will be from $400,000 to $500,000 during the present season—that is, to the end of October next, as previously stated.

"CHAS. MCLAUGHLIN,
"President of the Consolidated Amador Volcano Hydraulic Gold
"Paris, April 11, 1879. Mining Company of California."

The above document is of considerable importance for French

shareholders, as emanating from a San Francisco gentleman of good reputation and great wealth. His estimate of the probable earning of the Amador Volcano Mines far exceeds that previously given by the engineers who have reported upon the Volcano property. Accordingly, therefore, to Mr. McLaughlin's opinion, the dividend for this year, provided there has been plenty of rain, will be considerably larger than that which has been paid in January last.

## THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week business has continued very quiet, although, owing to the extreme abundance of money and an appearance of a slight revival in trade, the feeling generally is more confident. Now that more satisfactory news has arrived from Zululand there is nothing in view politically to disturb prices, which are in many cases so depressed by reason of forced sales through the Bank failures, or other exceptional circumstances, as to offer considerable inducement to investors.

In shares of coal and iron companies the movements are important. The strike among the Durham miners has now assumed so serious an aspect that there can be no doubt both the coal and iron trades in Scotland will be benefited by such a disturbance in the great competing district. Benhar shares rose from 15s. to 1*l.* on the issue of the report referred to below, but are now easier at 18s. to 19s. The report to be submitted at the meeting to-day of Bagnall and Sons (Limited), shows a loss of 12,693*l.* on last year's working. The directors regret that all the new shares have not been taken up, and that Mr. Albert Grant has not paid his 16,500*l.* Owing to this non-payment the company are entitled to claim 61,150*l.* from Mr. Grant. The movements during the week comprise a rise of 1s. 3d. on Scottish Australian (new), while Bolckow Vaughan (A) have declined 1*l.*, Monkland (pref.) 10s., Arniston and Ebbw Vale each 5s, and Monkland (ordinary), 2s. 6d. Steel Company of Canada shares are offered. Andrew Knowles and Sons are at 11¼ dis.; Bolckow Vaughan (A), 61½ to 62; ditto (B), 35 to 36; and ditto 5 per cent. pref., 195⅛. Brown, Bayley, and Dixon, 9½ dis.; Cardiff and Swansea, 15s. to 25s.; Chapel House, 19s. to 23s.; Charles Cammell and Co., 17½ ds.; Chillington, 40s.; Ebbw Vale, 65s. to 67s. 6d.; John Brown and Co., 25½ dis.; Lehigh and Wilkes Barre, 9*l.*; Midland (new), 5 dis.; Muntz's Metal, 14¼; Monkland (pref.), 40s. to 50s.; Newport Abercarn, 90s.; Omoa and Cleland, 4s. to 6s; Parkgate, 25¼ dis.; Pelsall, 11 dis.; Rhymney, 13; Sandwell Park, 13½; Scottish Australian, 35s. to 40s.; Sheepbridge, 48¼ dis.; South Wales, 50s.; Thorp's Gawber Hall, 20s.; Tredegar (A), 14; Workington Malleable, 12½.

In shares of foreign copper companies, Cape have advanced 10s. per share, while Tharsis are 7s. 6d. lower, Huntington 2s., and Canadian 1s. 6d. Advices have been received of some encouraging improvement at the Cape mines. New Quebrada are at 40s. Rio Tinto 5 per cent., 65¾. Yorke Peninsula (pref.), 11s. 3d. to 13s. 9d.

Shares of home mines are in some cases slightly lower. In the metal markets, copper has for the present the best appearance for a rise. The Glasgow Caradon sale of 190 tons of copper ore on the 17th inst., realising 65*l.* 14s., or an average of 68s. 7d. per ton, compared with 190 tons at 77s. 11d. last month, while the sales in the month of April for some years back have been:—In 1878 225 tons, at 88s. 3d.; in 1877, 240, at 84s. 6d.; in 1876, 240, at 105s. 9d.; in 1875, 260, at 100s. 7d.; and in 1874, 250, at 91s. 10d. This is the company's fourth sale for the current financial year, and the proceeds of these four sales show a decrease of 231*l.*, when compared with the sales for the corresponding period of 18.8. Lead continues very depressed, but stocks are not especially heavy, and a rise may occur at any time, when some lead shares would double and treble their present prices. Tin is temporarily flatter, but is still considered to be on the upward tendency. A meeting of the General Mining Association is to be held to-morrow. Bedford United are at 5s. Caron, 20s. Combmartin, 2s. 6d. Carn Brea, 31. Cook's Kitchen, 55s. Dolcoath, 28. Devon Consols, 42s. 6d. East Van, 37s. 6d. East Caradon, 7s. 6d. East Lovell, 25s. East Pool, 11. Gawton United, 7s. 6d. Great Laxey, 15 to 16. Grogwinion, 50s. Gunnislake (Clitters), 15s. Herodsfoot, 45s. Hingston Down, 7s. 6d. Killifreth, 2s. 6d. Marke Valley, 15s. Melyndur, 15s. Morfa-Du, 15s. Mellanear, 80s. Phœnix United, 50s. Paracomb, 5s. Prince Patrick, 20s. to 25s. Roman Gravels, 8½ to 9. South Caradon, 60. South Condurrow, 12. South Frances, 10, ex div. South Molton Consols, 5s. Tankerville, 65s. to 75s. Tincroft, 10¾. West Basset, 5¼. West Frances, 5½. West Assheton, 22s. 6d. to 27s. 6d. West Chiverton, 55s. West Wye Valley, 15s. to 20s. West Seton, 5. West Tolgus, 27. Wheal Crebor, 6s. Wheal Kitty (St. Agnes), 2s. 6d. to 5s. Wheal Grenville, 70s. Wheal Jane, 25s. Wheal Peevor, 9½. Wheal Uny, 12s. 6d.

In shares of gold and silver mines next to nothing doing. Richmonds have been about 9*l.* all the week. It appears that the fire, which has burned half Eureka, has not harmed their works; but, owing to an accident, the run is less, at $50,000. It is very satisfactory that the Imperial Government of Brazil have seen it their interest to remove the 4 per cent. provincial tax levied on St. John del Rey, and the directors of that undertaking have proved their ability by the successful negociation of this matter. Eberhardts are not much altered, having advanced a trifle, then relapsed; the mine reports are not discouraging, and an experiment is to be made to utilise the company's tailings. The report to be presented at the annual meeting of Santa Barbara, on April 30, shows an available balance of 5662*l.*; after placing 500*l.* to reserve a further dividend of 1s. 6d. per 10s. share is declared, making—with the interim of 1s. formerly paid—2s per cent. for the year, leaving a balance of 162*l.* The Sierra Buttes is making a fair rate of profit out of a large quantity of poor ore, with a sprinkling of rich ore, but some new discoveries have been made of rich ore which are considered to make the prospects very good. At the neigbouring mine, Plumas Eureka, larger dividends are made, and from one mill; but a second one has been completed at a cost of 18,000*l.* Additional profits are, therefore, expected, which will in the first place be used to repay this outlay, and after that the ordinary dividends, of course, are likely to be greatly increased. The clean-up at Original Amador Mine of the London and California Company for March is estimated at $8800. Australasian mines wanted. Colorado United are at 42s. 6d. Don Pedro, 15s.; Emma, 2s. 6d.; Exchequer, 2s. 6d. to 5s.; Flagstaff, 2s. 6d. to 5s.; New Zealand Kapanga, 10s.; Pestarena, 2s. 6d. to 3s.; Rossa Grande, 1s. 6d. to 2s. 6d.; South Aurora, 2s. 6d. to 5s.

Shares of oil companies continue in demand. Broxburn have advanced ¾; Dalmeny, ⅜; Young's Paraffin, ⅛; and Oakbank, 1s. 6d.; while Uphall are 2s. 6d. lower.

In shares of miscellaneous companies there is not much alteration. Birmingham and Midland Counties Val de Travers, 5⁄8 to ⅞; Hopkins, Gilkes, and Co., 11¼ dis.; Milner's Safe, 7⅛; Palmer's Shipbuilding (B), 15 dis.; Phospho-Guano, 5¾ to 6¼; Val de Travers, 4. In Wagon Companies shares prices are inclined to improve. Scottish (new), wanted, at 3s.; Birmingham are at 13; Bristol and South Wales, 6¼; Gloucester, 6⅛; Metopolitan, 2½ prem.; Midland, 7⅛; Railway Carriage, 4; Starbuck, 11⅛, ex div.; and Swansea, 2. Chemical companies shares are also generally firmer. Lawes's 7 per cent. (preference) shares are wanted, and the ordinary shares at 8¼; Langdale, 4⅜; and Newcastle, 50s. to 22s. 6d.

BENHAR COAL COMPANY (Limited).—The directors of this company have issued a long report, in which they state they have purposely abstained from appealing to the shareholders or the public to take up their preference shares until they should have completed such investigations as would satisfactorily show that the company can be carried on to advantage. They directed an examination to be made of the hitherto unexplored portion of the Benhar mineral fields, but—partly owing to the severe weather—these provings are not yet completed. They are, however, able to speak with some degree of confidence in regard to the merits and capabilities of the company's going business and works. They find that the profits for the four months, November to February, from the collieries and oil works, have amounted to 9189*l.* net. This sum, were the company freed from its present entanglements, would, after providing for depreciation, be available in one shape or another for the benefit of the shareholders. This result has been arrived at without future workings being in any respect prejudiced for the sake of present profits. The period during which this result has been attained was no doubt the most favourable of the whole year for the sale of household coal, and the more so on account of the severe weather. On the other hand, the business has been conducted under many disadvantages incidental to its embarrassed position, and it should be borne in mind when the unprecedented depression in trade passes away this result is indicative that they will attain a very considerable degree of prosperity. These results prove that the concern is an exceptionally valuable one, while they have a nucleus of profitable business under contract sufficient to ensure a continuance of at least moderate profits for several years to come, before the expiring of which it can scarcely be doubted that the aspect of trade will have so improved as to give a very different appearance to affairs. In regard to the duration of the company's collieries, it is estimated that the Niddrie field will not be exhausted for 22½ years, while the extent of cannel coal procurable from it is practically inexhaustible, and there is also a practically inexhaustible supply of household coal in it of superior quality, which could be made available should the Benhar field give out.

As regards the Benhar fields the engineer considers they can work the Virtuewell seam for seven years from existing pits, while the Jewel, or No. 2 coal, is inexhaustible during the currency of their tenure. The average profit on these two classes of coal has been about 1s. 6d. per ton during the last four months. In regard to the company's financial position, it will be remembered the accountants stated that the company's debts exceeded their property by 186,593*l.* Against that there are the following assets:—Plant and machinery, 36,177*l.*; workmen's houses and other buildings at two-third's cost, 36,8 0*l.*; Broxburn and Benhar Oilworks, yielding at least 8000*l.* a year, valued at 40,000*l.*; and Abercarn Brickworks, 5210*l.* The total of these four assets, and the profit made in the last four months—9189*l.*—make together 127,376*l.*, which leaves a deficit of only 29,221*l.* Against this deficit are the collieries at Niddrie and Benhar, and if they are worth even that small sum the company is solvent as a going concern, and whatever excess of value beyond this sum those undertakings possess represents the value of the reversion to the ordinary shareholders. These calculations are based on the assumption of the works being kept going; if brought to a standstill and broken up much that is at present valuable would become worthless. The directors, however, have satisfied themselves that the company, if fairly looked at, is sound, and that its present embarrassments are the result of administrative mismanagement. Of the 100,000*l.* preference stock 35,000*l.*, has now been subscribed, and the directors appeal to the shareholders and creditors to take it all up. They point out that the new capital is required to pay off the present indebtedness, and will not increase the company's liabilities; also that those who applied for it could realise it again as soon as desired. Besides, when it can be done to advantage, the few duties and certain portions of the surface of the heritable estate can be disposed of, and thus bring the company's obligations within more manageable limits. The directors cannot believe that in the face of the foregoing statement the shareholders and creditors will allow the company to be wound up.

SOUTH COMBMARTIN.—This mining property appears to be worth the attention of investors. It is one of the best mines in the north of Devon, and in a decidedly good situation. The terms of grant are very favourable, being 1-16th royalty and a minimum rental of only 5*l.* per annum for the first three years, and a payment of 20*l.* per annum, to merge into royalty. The mine is on the Cost-book System, in 6000 shares. The capital is firmly held by a few shareholders, so that the shares are likely to have an important rise from their present nominal quotation of 2s. 6d. to 5s. The following report has been made on this mine:—"The property adjoins the Combmartin Mine, and, from its situation being south west, must embrace within its limits the rich lodes of this famous old mine. A shaft has been sunk on a caunter lode some 5 to 6 fathoms, the lode being 4 ft. wide, and in the bottom producing some rich silver-lead. From the quantity of water in the lode sinking was suspended. It is intended to bring in a cross-cut from the valley, which will give about 40 fms. backs. In this level two other lodes will be intersected. It is considered that the lode opened upon is the Gorwell lode, which was so productive in the old mine. It is considered advisable to open on this lode south-east by costeaning, also to put a few pits on Harris lode, which will show how far the cross-cut requires to be driven to intersect them. In starting the cross-cut where proposed it is expected a lode will be intersected in about 10 fms. driving. This lode shows splendid gossan and quartz where seen near the surface, and as the ground rises very fast 20 fms. backs will soon be obtained. The killas is of the best description for producing lead, with runs of limestone to the south, which is considered very favourable for the production of silver lead. There is a good supply of water for pumping and dressing purposes. Any discovery in the adjoining Combmartin Mine will most likely increase the value of this mine. It should be borne in mind that this is a celebrated district for silver-lead, and there can be no doubt that the prosecution of these proposed workings will open out a very valuable mine."

WEST CALDER OILWORKS.—The mineral oil manufacturing works with coal and shale pits and leases of the late West Calder Company are now going to be disposed of. The pits at Gaireside have a command of shale of the best quality, which can be raised at a low cost. The Cabinshaw field, which is estimated to contain over 4,000,000 tons of shale, is considered one of the finest in the kingdom. It is well known that, notwithstanding the extreme depression of trade, and the low price of paraffin oil, the large companies at present in operation are working at a profit, and expected to continue paying handsome dividends. There is reason to believe that, with a moderate expenditure for development of the Cabinshaw field, and the erection of some additional necessary plant, these properties would also prove remunerative investments. The machinery and buildings at Gaireside are to a large extent of recent construction, and the appliances are of the most efficient description. They include retorts for the manufacture of crude oils, stills, washers, &c., for the refining of burning and lubricating oils, plant for the freezing and pressing of crude paraffin, and for the manufacture of sulphate of ammonia, and utilisation of tar. The refinery is calculated to be capable of working over 2,000,000 gallons of crude oil in the year; with a small outlay it might be made to accomplish a half more. These properties cost the old company over 90,000*l.*, and could now be had for just about one quarter of that sum.

PLYMPTON MINING AND ARSENICAL COMPANY (Limited).—A company has been formed under this title to purchase the lease, machinery, and plant, &c., of the Wheal Mary Hutchings Mine, situate in the parish of Plympton, St. Mary, Devon, and to work the same. The mine has already been worked under a nearly expired lease, but the vendors have agreed to renew it for 21 years. The operations hitherto have been confined to raising tin and making arsenic soot, but the new company will erect calcining and refining works, so that the soot which can be produced in large quantities from the abundance of arsenic mundic already laid open may be converted into refined arsenic, for which there is a good demand at remunerative prices. The works can be erected in about six months, by which time a good stock of arsenic soot would also be ready to be refined. From the reports made on the property by three experts, it appears the mine is in congenial strata. The ground laid open extends to no less than 150 fms. in length, with an average height of 20 fms. It is calculated to yield 15,000 tons of stuff, taking an average of 5 tons per fathom. Thus this company reaps the advantage of this dead outlay, and thereby is enabled at once to make profitable returns. The mine is well found in machinery and plant of every description, also with trams, burning-houses, and two powerful water-wheels, for which there is an ample supply of water for pumping, drawing, stamping, &c. The capital is in 6000 shares, at 2*l.* each.

| Capital. | | Paid up. | Dividends. Rate per cent. per annum. Previous. | | Last. | Description of shares. | Last price. |
|---|---|---|---|---|---|---|---|
| | | | COAL, IRON, STEEL. | | | | |
| £ 10 | ... | £8 | ... £ 7† | ... | £ 5 | ...Arniston Coal (Limited) | 5 |
| 10 | ... | 10 | ... 4 | ... | 4 | ...Benhar Coal (Limited) | 18s. 3d. |
| 100 | ... | 55 | ...34s6d[ | ... | 25s] | ...Bolckow, Vaughan, and Co. (Lim.)...A. | 62 |
| 10 | ... | 10 | ... 10 | ... | 10 | ...Cairntable Gas Coal (Limited) | 5¼ |
| 10 | ... | 10 | ...4s] April, 1876 | | | ...Chillington Iron (Limited) | 40s. |
| 10 | ... | 10 | ... — | ... | — | ...Clyde Coal (Limited) | 40s. |
| 23 | ... | 20 | ...10s] Dec., 1874 | | | ...Ebbw Vale Steel, Iron, and Coal (Lim.) | 65s. |
| 10 | ... | 7 | ... nil | ... | nil | ...Fife Coal (Limited) | 75s. |
| 10 | ... | 10 | ... nil | ... | nil | ...Glasgow Port Washington Iron&Coal(L) | 50s. |
| 10 | ... | 10 | ... — | ... | — | ... Ditto Prepaid | 50s. |
| 10 | ... | 10 | ... — | ... | — | ...Lochore and Capledrae (Limited) | 20s. |
| 10 | ... | 10 | ... nil | ... | nil | ...Marbella Iron Ore (Limited) | 30s. |
| 10 | ... | 10 | ... nil | ... | nil | ...Monkland Iron and Coal (Limited) | 27s. 6d. |
| 10 | ... | 10 | ... 5 | ... | 4 | ... Ditto Guaranteed Preference.. | 50s. |
| 100 | ... | 100 | ... nil | ... | nil | ...Nant-y-Glo & Blaina Ironworks pref.(L) | 16 |
| 6 | ... | 6 | ... nil | ... | nil | ...Omoa & Cleland Iron & Coal (L. & Red.) | 6s. |
| 1 | ... | 1 | ... 15 | ... | 15 | ...Scottish Australian Mining (Lim) | 37s. 6d. |
| 1 | ... | 10s. | ... 15 | ... | 15 | ... Ditto New | 17s. 6d. |
| Stock | ... | 100 | ... nil | ... | nil | ...Shotts Iron | 60 |
| | | | COPPER, SULPHUR, TIN. | | | | |
| 4 | ... | 4 | ... — | ... | — | ...Canadian Copper and Sulphur (Lim.)... | 6s. |
| 10 | ... | 7 | ...72s 6d[ | ... | 35s]* | ...Cape Copper (Limited) | 28⅛ |
| 1 | ... | 1 | ... 7⅛ | ... | 2⅛ | ...Glasgow Caradon Copper Mining (Lim.) | 19s. |
| 1 | ... | 15s. | ... 7⅛ | ... | 2⅛ | ... Ditto New | 13s. 6d. |
| 10 | ... | 9¾ | ... nil | ... | nil | ...Huntington Copper and Sulphur (L.)... | 17s. |
| 4 | ... | 4 | ... — | ... | — | ...Panulcillo Copper (Limited) | 26s. |
| 10 | ... | 10 | ... 6† | ... | 6† | ...Rio Tinto (Limited) | 52s. 6d. |
| 20 | ... | 20 | ... 7 | ... | 7 | ... Ditto, 7 per cent. Mortgage Bonds.. | 13¼ |
| 100 | ... | 100 | ... 5 | ... | 5 | ... Do. 5 p.ct. Mor. Deb. (Sp.Con. Bds.) | 59 |
| 10 | ... | 10 | ... 20 | ... | 17½ | ...Tharsis Copper and Sulphur (Lim.) | 21⅜ |
| 10 | ... | 7 | ... 20 | ... | 17½ | ... Ditto New | 14½ |
| 1 | ... | 1 | ... — | ... | — | ...Yorke Peninsula Mining (Limited) | 5s. |
| 1 | ... | 1 | ... — | ... | — | ... Ditto, 15 per cent. Guaranteed Pref. | 12s. 6d. |
| | | | GOLD, SILVER. | | | | |
| 1 | ... | 1 | ... — | ... | — | ...Australasian Mines Investment (Lim.). | 5s. |
| 5 | ... | 5 | ... 10s.] | ... | 10s. ] | ...Richmond Mining (Limited) | 9 |
| | | | OIL. | | | | |
| 10 | ... | 8½ | ... — | ... | — | ...Broxburn Oil (Limited) | 12 |
| 10 | ... | 7 | ... 5 | ... | 5 | ...Dalmeny Oil (Limited) | 7 |
| 1 | ... | 1 | ... 25 | ... | 15 | ...Oakbank Oil (Limited) | 42s. 6d. |
| 1 | ... | 8s. | ... — | ... | 15 | .. Ditto | 11s. |
| 10 | ... | 10 | ... 7½ | ... | 2 | ...Uphall Mineral Oil (Limited) "A" | 7¼ |
| 10 | ... | 10 | ... — | ... | — | ... Ditto "B" Deferred | 10 |
| 10 | ... | 8½ | ... 17½ | ... | 17½ | ..Young's Paraffin Light & Mineral Oil(L) | 14¾ |
| | | | MISCELLANEOUS. | | | | |
| 50 | ... | 25 | ... 5 | ... | 6 | ...London & Glasgow Engineering & Iron Shipbuilding (Limited) | 20 |
| 7 | ... | 7 | ... 10 | ... | 5 | ...Phospho Guano (Limited) | 6¼ |
| 10 | ... | 10 | ... 6 | ... | 5 | ...Scottish Wagon (Limited) | 6⅛ |
| 10 | ... | 4 | ... 6 | ... | 5 | ... Ditto New | 30s. |

† Interim. † Per share. * For six months of 1878.

NOTE.—The above lists of mines and auxiliary associations are as full as can be ascertained. Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them, and such information as can be ascertained from time to to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.
*Post Office Buildings, Stirling, April 24.*

CORNISH PUMPING ENGINES.—The number of pumping-engines reported for March is 16. They have consumed 1679 tons of coal, and lifted 12·3 million tons of water 10 fms. high. The average duty of the whole is, therefore, 49,500,000 lbs. lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

| | | |
|---|---|---|
| Mellanear—76 in. | Millions | 54·9 |
| Mellanear—Gundry's 80 in. | | 53·5 |
| West Wheal Frances—68 in. | | 53·5 |
| West Tolgus—Richard's 70 in. | | 53·6 |
| West Wheal Seton—Harvey's 85 in. | | 71·7 |
| West Wheal Seton—Rule's 70 in. | | 79·4 |

LEAD MINING IN GLAMORGANSHIRE.—The Glamorgan Consolidated Lead Mining Company has been formed with a capital of 30,000*l.*, in shares of 1*l.* each, to purchase (for 10,000*l.* in fully-paid shares) the Llan Gan Lead Mines in Glamorganshire. The property has been recently opened by a company which sank the main shaft to a depth of 20 fathoms, drove cross-cuts, intersected two lodes, and otherwise developed the mines. These works have proved the property to be most valuable, and the owners were on the eve of success when their funds were exhausted. On the property, and belonging to it, are a powerful Cornish engine, with all necessary gear, pumps, &c., winding engine, crusher, &c., all in good working order, together with engine and crusher houses, changing room and lead store house, captain's residence, office, smithy, and carpenters' shops, dressing floors (which are extensive and well arranged, with the most approved and modern appliances), and every necessary requisite for an extensive mine in full operation. Seven well defined and masterly lodes have been opened, from one of which the late company took out and sold from shallow workings alone over 100 tons of lead, and the present appearance of the lode is better than ever, the richest part being in the sole of the levels. The other lodes have also been sufficiently prospected to prove their value. The property has been inspected and favourably reported upon by Capts. Walter Eddy, Sampson Michell, and William Michell. The two former say they were pleased to find the works so well laid out, the main or new shaft, 12 ft. by 8 ft., completed to the 20, with pitwork fixed, and the pumping and winding engines sufficiently powerful for the requirements of a large mine. They recommend the shaft being further sunk two lengths, of 15 fathoms each, making the total depth from surface 50 fathoms, and to cross cut all the lodes both at the 35 and 50, and drive east and west on those found most productive. These works, in their opinion, can be carried out and the mine fully developed to this depth for the sum of 5000*l.* to 6000*l.* If this amount be laid out in the way indicated they have every reason to believe that it will result in laying open a good dividend-paying mine. Capt. Wm. Michell reports that there are seven strong, well-defined lodes, each producing good lead ore, and all can be worked from the engine-shaft, and there is good winding, pumping, and dressing machinery on the mine, all in thorough working order. The distance from the engine-shaft to the old engine shaft is 120 fathoms, and the only trials made in the sett are on this portion, and he feels confident from his own experience since he has had charge of the works that with sufficient capital to sink and open on the different lodes the returns of lead ore will be such as to yield large profits on the investment. There are also many other lodes that can be traced in the sett, but have not been opened on; and throughout the neighbourhood indications are found that prove the whole district to abound in mineral wealth, and the time will come when this part of Glamorganshire will become a first-rate mining district.

## WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Ten years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the Journal on the Clementina Mine.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the 'Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, ounded on the best practical advice they can obtain from the mining districts, ut they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash or for the usual fornightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

A glossary of mining terms, English and foreign, was published at the office of the *Mining Journal* in 1848, and we dare say copies may still be had. "Maze Monday" does not occur in it; it is a holiday the men have been accustomed to take the Monday after "pay day." In former times, as we have explained before, the produce of a mine was sold twelve times a year, and there were concurrently twelve pay days for the men, so that occasionally their month consisted of five weeks. A few years ago the four weeks month system came into vogue, so that now there are thirteen months pay in a miner's year. But when this was conceded to the men we are under the impression that they agreed to give up "Maze Monday." Agents generally were favourable to the four week system. Under the old a man with 10*l.* per month got 120*l.* a year; under the new system he gets 130*l.*

CAPE COPPER.—The last advices show that the 80, east of No. 24 winze, has improved, and is now worth 3 tons of copper ore per fathom in the end.

HULTAFALLS, we presume, are advancing because the necessary capital has been raised by the issue of debentures. When the shares were first issued at 5*l.* we did not recommend them, because we felt satisfied the working capital was insufficient, and that a deadlock would occur sooner or later. Now this has been got over shares may be worth buying. There is plenty of stuff at the mines which, if successfully treated, may result in large profits.

The difference in the prices of lead obtained by various mines is owing in some measure to the percentage of the ore, but mostly to the silver contained in it. Galena, or the sulphuret of lead, which is the most abundant, contains about 85 per cent. of lead, 13 of sulphur, and a trace of iron. In 1822 some sulphuret of lead and silver found at Wheal Rose, in Newlyn, Cornwall, produced 77 per cent. of lead, and in it 60 to 65 ozs. of silver to the ton. As a rule the ores in the east of Cornwall have been richer for silver than those of the west. The great East Rose returned mostly galena, or potters' lead, at 10*l.* to 12*l.* per ton. Trelawney and Mary Ann in the east average, we think, 40 ozs. of silver, and brought over 20*l.* per ton. Herodsfoot ore has a large percentage of silver, and has also brought over 20*l.* per ton, but both lead and silver are cheaper now. Arseniate of lead was found years ago in Beeralston, in which parish was the rich South and East Tamar Mines. It was also found in 1825 at Wheal Alfred, combined with copper. If arsenic be added to ordinary melted lead it causes it to run into drops. And this is how shot is made.

WHEAL PEEVOR.—We have reason to believe that the present dulness in shares is owing to matters quite unconnected with the mine, and it may be a good time to buy.

HERODSFOOT.—Notwithstanding the delays that have occurred in the works, owing to the change necessary in taking possession of the mine, and the fact that the old drawing chain broke, and a new wire-rope had to be obtained to replace it, the mine has sampled 55 tons of silver-lead ore for the two months, which speaks well for its productiveness and the importance of the discovery in the 160 made since the present company took possession. We understand the next two months will show even better results.

SOUTH FRANCES.—As we took some pains to call attention to this mine when shares were at 3*l.* each, its present position is very gratifying to us. The profit on four months working is 5437*l.*, after charging the costs close up to the meeting, as all costs should be.

LAXEY UNITED.—Some months ago we strongly recommended an amalgamation between North Laxey and Glencherry mines, but it was not then viewed with favour by the North Laxey directors. A company, however, has now been formed for working the two mines as Laxey United, and the North Laxey shareholders who have spent so much money, hitherto without success, have a fair prospect of recouping themselves in the joint enterprise without much further outlay. And unless they come forward by May 6 and subscribe for the new capital, they will, we are told, lose their mine altogether, for there are parties only too anxious to get it at their own price, and reap the reward of the outlay already incurred upon it. By the new scheme present holders will get 8500 shares of 1*l.* each fully paid up for distribution among them, and also a bonus share fully paid-up for every cash share they take, the latter to be paid for by instalments.

SATURDAY, APRIL 19.—Market very quiet. Van, 19¼ to 20¼; Great Laxey, 15 to 16; Roman Gravels, 8¾ to 9¼; Herodsfoot, 3 to 3½; West Chiverton, 3 to 3½; Aberllyn, 10 to 12; Carn Brea, 30 to 32; Dolcoath, 28 to 30; South Frances, 10 to 10½; South Condurrow, 12 to 12½; West Basset, 4¾ to 5¼; West Frances, 5½ to 6; Peevor, 9¼ to 9¾; Grenville, 3¼ to 3¾; Mellanear, 3½ to 3¾; Devon Great Consols, 2¼ to 2½; Parys Mountain, 10s. to 12s. 6d.; Marke Valley, 12s. 6d. to 17s. 6d.

MONDAY, APRIL 21.—Market moderately active. South Frances, 10 to 10¼; South Condurrow, 11½ to 12, ex div. 10s.; West Basset, 4¾ to 5¼; Dolcoath, 28 to 30; Peevor, 9¼ to 9¾; Van, 19½ to 20¼; Great Laxey, 15 to 16; Herods-

foot, 3 to 3½; Tankerville, 3¼ to 3½; West Assheton, 25s. to 30s.; Leadhills, 2 to 2¼; East Van, 1⅝ to 1⅞; West Chiverton, 2½ to 3; Santa Barbara, 2⅛ to 2⅜; Don Pedro, 14s. to 16s.; Richmond, 8⅞ to 9⅛; Cape Copper, 27½ to 28½.

TUESDAY, APRIL 22.—Market quiet. South Frances shares firmer, and quotations for the day are as follows:—Aberllyn, 10 to 12; Bettws-y-Coed, 20s. to 25s.; Carn Brea, 30 to 32; Devon Great Consols, 2 to 2¼; Dolcoath, 27 to 29; East Van, 1⅝ to 1⅞; Glenroy Lead, 7s. 6d. to 12s. 6d.; Great Laxey, 15 to 16; Herodsfoot, 3 to 3½; Leadhills, 2 to 2¼; Mellanear, 3½ to 3¾; Marke Valley, 10s. to 15s.; Parys Mountain, 10s. to 12s. 6d.; Penstruthal, 1s. 6d. to 2s. 6d.; Roman Gravels, 8¾ to 9¼; South Condurrow, 11½ to 12; South Frances, 10¼ to 10¾; Tankerville, 3¼ to 3½; Tincroft, 10 to 10½; Van, 19½ to 20½; West Basset, 4¾ to 5¼; West Chiverton, 2½ to 3; West Frances, 5¼ to 5¾; Agar, 3½ to 4; Grenville, 3¼ to 3¾; Crebor, 5s. to 7s. 6d.; Peevor, 9¼ to 9¾; Arendal, 3s. to 4½; Cape Copper, 28 to 29; Colorado, 2 to 2¼; Don Pedro, 14s. to 16s.; Eberhardt, 4¼ to 4½; Frontino, 2½ to 2¾; Hultafall, 2 to 2¼; New Quebrada, 1⅞ to 2⅛; Panulcillo Copper, 25s. to 30s.; Richmond, 8¾ to 9; Santabara, 2⅛ to 2¾.

WEDNESDAY, APRIL 23.—Market continues very inactive. South Frances firm at 10¼ to 11; Van easier at 19 to 20; and Richmond, 8½ to 9. Other prices the same as quoted yesterday.

THURSDAY, APRIL 24.—Market for tin shares easier, and very little business doing. Dolcoath, 27 to 29; South Frances, 10 to 11; West Basset, 4¼ to 5; West Frances, 5 to 5½; Tincroft, 10 to 10½; Grenville, 3¼ to 3¾; Peevor, 9¼ to 9¾; Van, 19 to 20; Great Laxey, 15 to 16; Roman Gravels, 8¾ to 9; Herodsfoot, 3 to 3½; Tankerville, 3¼ to 3½; West Chiverton, 2½ to 3; Aberllyn, 10 ro 12; East Van, 1½ to 1¾; Leadhills, 2 to 2¼; Mellanear, 3½ to 3¾; Parys Mountain, 10s. to 12s. 6d.; Marke Valley, 10s. to 15s.; Devon Great Consols, 2 to 2¼.

FRIDAY, APRIL 25.—Market continues very quiet, and prices for the most part are the same as yesterday.

MR. WILLIAM H. H. WATSON begs to offer his advice and services to Shareholders and Intending Investors in Mines, and in the Purchase and Sale of Shares.

Address: W. H. H. WATSON, 1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON, E.C.

# Meetings of Public Companies.

## MELLANEAR COPPER MINE COMPANY.

The ordinary general meeting of shareholders was held at the offices of the company, Queen-street-place, yesterday,

Mr. SAMUEL J. WILDE in the chair.

The notice convening the meeting was read by Mr. W. G. WILLIAMS, the secretary. The report of the directors was as follows:—

The directors have pleasure in submitting the statement of accounts for the half-year ending Dec. 31, showing that the profit on working the mine during that period has amounted to the sum of 1936*l.* 13s. 7d. This being added to the balance which remained of the previous profits, made a total of 2222*l.* 16s. 10d. to the credit of the profit and loss account.

This enabled the directors to pay a dividend of 3s. per share on Feb. 8 last, which absorbed 1500*l.*, to write off a further sum from the preliminary expenses account of 200*l.*, and to carry to the credit of the reserve fund account 190*l.*; leaving a balance of 332*l.* 16s. 10d. carried forward to the credit of the profit and loss account. The reserve fund now amounts to 540*l.*

The returns of copper ore for the past six months amounted to 2969 tons, or 24 tons more than in the preceding half-year, but the average price realised was 3*l.* 0s 4d., or 6s. 1d. per ton less than the average of the half year ending June, making a difference on the total quantity of 903*l.* Nevertheless it will be seen that the profit of the second half of 1878 has only been about 90*l.* less than that of the first half.

The usual summary of work done, and of the results obtained in the half-year, are given in the report of Capt. Gilbert, and the directors are gratified to be able to state that an estimate which he has forwarded to them shows that, although the returns embraced in the present accounts average 494 tons per month, the reserves in the mine at the present time are computed at about 14,700 tons, or an increase of about 730 tons over the quantity mentioned in the report to the last general meeting.

The weekly published reports have shown that great progress has been made in extending the levels westward, and that these have all laid open good ore ground.

The very severe weather of this winter has impeded the progress of the works connected with the new dressing floors and the building of a counting house at the mine, but they are now approaching completion, and will soon be finished. The sum expended on them in the past six months—592*l.* 12s. 1d., has been charged against capital in the plant account.

The managers have lately been able to secure, on very reasonable terms, a powerful engine for the crusher and stone-breaker well adapted for these machines, and a smaller one for the other apparatus of the dressing floors. The entire outfit of this machinery will be completed during this summer, and will be of great advantage in the future working of the mine.

The directors have now the satisfaction of reporting that the new leases of the whole property, for which arrangements have been made as stated last year, have been executed, and are in the company's possession.

The position of the undertaking is, therefore, in all respects such as must give satisfaction to the shareholders. That the profit for the entire year 1878 was 3662*l.* 17s. 3d., or nearly 20 per cent. on the capital, despite the very depressed state of the copper market, gives great encouragement for the future, when it may be hoped better prices will prevail

The CHAIRMAN said that considering the bad times through which they had passed, and the low price of copper, which had necessitated the shutting up of one mine after another all over the world, and the reducing the amount of work at many others, he thought the shareholders might congratulate themselves upon the position of the Mellanear Mine. Everyone would admit that 15 per cent. was an unsatisfactory dividend. During the past year rather more tons of ore had been raised than in the preceding year, and not only had they not drawn upon the reserves but had added to them about 700 tons, and the reserves now stood at 14,700 tons, which represented two or three years working. So they would see that the company was in a very substantial position as regarded their future prospects. It had been a debateable point whether they should not have raised less ore, and paid a less dividend, as it seemed a shame to raise ore at the present price; but as they could pay 15 per cent., and add to the reserve, the directors thought it better to go on as they were. In addition to the dividend of 15 per cent., they had put aside for reserve fund as much as they were allowed to do by the Articles of Association—10 per cent. upon the net profits. The reserve fund at the present time amounted to 540*l.* During the last year everything had been charged to revenue account, with the exception of the new building and new machinery on the surface, which was part of what was originally intended to be put up, and for which the capital was raised, but everything underground and the ordinary surface operations went to the cost of the mine, therefore the profit was clear profit. In addition to the sum added to reserve, the directors had also set aside 200*l.* towards the reduction of the preliminary expenses, and the same amount had been set aside last half year, so that the preliminary expenses had been reduced by 400*l.* Therefore, they were in a satisfactory position, so far as the mine is concerned. The directors had had difficulties to contend with. Copper had been very low; the average price during the last half-year had been 6s. 1d. less than in the first half of 1878, which made a difference of 900*l.* to the company. Since the company commenced its sales in January, 1877, they had sold 11,000 tons, which realised over 87,000*l.*, being an average of 2*l.* 6s. 2d. per ton. The price was now about 1*l.* per ton less than at the time of the first sale. The reason they had done so well was in consequence of the skill displayed by Mr. Richard Taylor, and those whom he selected to carry out the works. They had been able to work the mine well, profitably, and quickly. Another element of success was that the machinery had all been in good order for getting the best work at the lowest prices. There were new floors in a convenient part of the surface, and a new crusher, and machinery of various kinds, which were nearly finished, and would enable the directors to introduce further economies, and by-and-bye enable them to treat a larger quantity of ore. Another important point was that this was one of the cheapest worked mines in Cornwall; from the nature of the ground they were enabled to do the work at a very small price per fathom. That was continuing in the new ground which they were working into, and there was every reason to believe that would continue for a considerable time to come. (Hear, hear.) Where the principal workings were was in virgin ground, and good ore was found there, which was likely to continue. There was another point which the directors would have to consider, and that was the expediency of sinking a new shaft to the west of the present western shaft, as the levels were becoming rather extensive there. At present there were two shafts. The company had abundant capital; of the 20,000*l.* subscribed only 16,000*l.* had been expended, so there was 5000*l.* available for further purposes. In conclusion, he (the Chairman) moved the adoption of the report and accounts.—Mr. JOHN WILD seconded the resolution.

Mr. RICHARD TAYLOR said he did not know that it was necessary to add much to what had been said by the Chairman; but he wished to begin by a disclaimer of the entire credit of the success of this affair, as this was not so, because his brother had given his advice all through from the commencement, and the two junior members of the firm had also devoted to it the most careful attention, and one of them had been at the mine though not so often as himself. This mine was in some degree a child of his own, and he had devoted more attention to it than ordinarily he could give to each mine, because it so happened that he had other calls to travel in Cornwall, which had made it an easy matter for him to visit Mellanear very frequently. The description which the Chairman had given of the entire affair was most accurate in regard to the mine, and the workings of the mine. The levels going westward had invariably continued to produce ore, and there had been no intervals of unproductive ground. All the ground had been more or less productive, and all sufficiently so to work profitably. As the Chairman had said, this mine had the great advantage of being cheaply worked so far as actual mining was concerned, such as the driving of levels, sinking shafts, and so on. This arose from the very favourable nature of the rocks in which they were working, which were sufficiently soft to be easily mined, and at the same time sufficiently hard to require very little timber to keep the works open. But he need not remind those shareholders who were in the adventure before it came into the hands of his firm that there was one element of cost they had to contend with—the drainage of the mine and pumping of the water; there they had to contend with a source of very great and inevitable expense, and he could say in their favour in regard to that, that from the perfect condition in which the whole of the machinery had been kept the cost of pumping the enormous quantity of water in the mine had been reduced to a minimum, and the consumption of coal, in comparison with the quantity of water and the height to which it was lifted, was very moderate indeed, and the experience obtained had put at rest the fears expressed in that part of Cornwall, and generally entertained throughout the county, that when this company undertook the mine they were running their heads against a difficulty. That apprehension had now been set at rest. There was a large source of water in that part of the mine where the former adventurers worked, and the levels west of Gundry's shaft were also letting down great quantities of water; these were strong streams, but nothing like the stream which came from the cross-courses, and he thought there would be no difficulty in mastering it. They were sinking below the 100 fm. level, and the next time they met he expected they would describe the mine at a depth probably of 110 fathoms, and any difficulty in future would be avoided by sinking the shaft which had been alluded to by the Chairman. There was no doubt they would want a shaft further west than Gundry's shaft, and if the water was too much for the present engine there would be no difficulty in coping with it. The quantity of water which could be treated if the engine was put to extreme power was very great indeed. As the Chairman had said it had been a matter of serious discussion with the board as to what rate of returns they should make. The discoveries had enabled them to make very large returns, and they might have shown a very much larger profit if they had taken out the additional 700 tons of ore which had been placed in reserve. Some people might say they ought to have returned that ore, and made large profits in these times, so as to keep up people's spirits, and give satisfaction to those who had joined in the adventure, but he thought that a mine which almost in its infancy gave 15 per cent. upon the subscribed capital, and when 5000*l.* out of that capital was not expended, should content the shareholders. There were others who said that the directors should not have given any dividend at all, or at most made a very small return, but what would have been the result? If they had reduced the returns by 60, 80, or 100 tons per month they would have made just enough money to pay the cost, but there would have been no dividend whatever, and they would have taken away 2000 tons of ore or more, and not got anything by so doing. It seemed to him that that would not have been wise. It was impossible to predict how long the low state of the copper market would continue, and they might have gone on four or five years paying the cost, exhausting the mine, and getting nothing for it. Therefore, he had given this advice to the directors after very mature consideration, and the directors were satisfied that it was good advice, and had adopted it, and he hoped it would also be allowed by the shareholders generally to have been the right course in managing a mine of this kind. He would say a few words regarding the state of the mine. The western levels had gone on all making more or less discoveries of ore, in some places rich, in others moderately so, but all containing sufficient ore to be worked away eventually. They had first discovered ore in that part of the mine at a considerable depth—at the 60 or 70 fm. level, which was the depth their predecessors had reached, but had not extended cross cut levels from that shaft far enough to meet with the ore or probably this company would not have had the mine. Having cut the lode by a proper cross cut they had extended the two levels to a great distance in ore ground, and they had gone on from one level to another upwards until they had had a fine course in the 40 and 50 fm. levels, and materially so in the 30, and there was a rise coming near the surface in which the lode was turning out 2 tons per fathom, which would be a profitable bit of ground in that position. The most remarkable feature in the mine was that in the lower levels—the 90 and the 100—the character of the lode seemed if anything improved; it was large and strong, and of a promising nature, and the ore was of a better quality. A recent and important feature was the discovery in the 60 fm. level of a lode coming up from the south east direction. They had driven upon that in the direction south-east for 8 fathoms, and the lode turned out 4 tons per fathom, which was a very fine course of ore. It was the opinion of their agent, Capt. Gilbert, who was a good judge, that this was a new caunter lode, quite distinct from the main lode on which the workings were made. If so it would be a very valuable discovery. He had that day received a letter from his son, Mr. Percyvale Taylor, who was underground on Tuesday, giving a sketch of the ground and explaining it, and stating that when he saw it the ore was cut off by a branch of quartz spar, and it remained to be seen whether on the other side of the quartz-spar the caunter lode continued, for if this turned out to be the case it would be a very important addition to the value of the mine. He congratulated the shareholders of the company upon the success which they had had; so far as he could judge, there was a very good prospect of its continuing. In the eastern portion of the mine they had done nothing, but the directors had thought it right to apply to the owners of the land on the other side of the valley, in which there were considerable old workings, and had obtained from them the grant of a license for a couple of years to make some examination of the old workings, and determine whether work should be continued there.

The resolution for the adoption of the report and accounts was then put, and carried.

Mr. John Taylor and Mr. Richard Taylor were then re-elected directors.

The sum of 120*l.* was then voted as remuneration to the board of directors for the past year.

The auditor, Mr. Charles Hurlbatt, was re-appointed.

A vote of thanks to the Chairman and directors closed the proceedings.

## EAST POOL MINING COMPANY.

At a meeting of the adventurers, held at the mine on Monday (Mr. R. R. BROAD in the chair), the accounts for twelve weeks, showing a profit of 1226*l.* 7s. 5d., having been read, a dividend of 1280*l.* (4s. per share) was declared; and 115*l.* 16s. 8d. carried forward to the next meeting.——It was proposed by Mr. WILKINSON, and seconded by Mr. WILLIAM HARRIS, that the committee be and are hereby requested, on behalf of the adventurers of this mine, to take the earliest possible opportunity to lay before the lord the true position of this adventure, and to solicit his kind consideration to alleviate the extraneous charges by a reduction of the dues.

The following report was read to the meeting:—

*April* 21.—The engine-shaft sinking below the 195 is down 5 fms.; we have a lode in the shaft which is about 5 ft. wide, and is producing some good stones of tin. The sump winze shaft sinking below the 190 is down 8 fms; the lode has gone to the south; the shaft at present is of no value. The 190 is driven east from the sump-winze shaft 31 fms., and is worth for tin 20*l.* per fathom. The 190 is driven west from shaft 23 fms., and is worth for tin 6*l.* per fathom; this end is stopped, and as we think the main part of the lode is north we shall soon drive on the north part. In the 180 we have five stopes working—two east in the bottom, two west in the bottom, and one west in the back—worth on an average for tin 15*l.* per fathom each stope. At the 180, east from engine-shaft, the cross-cut driving south to cut the flat lode is driven since our last meeting 11 fms.; we hope in about 8 fms. more to reach the lode. The 170, west from engine shaft, on the north part of the great lode, is driven east from the cross-cut 2 fms., and is worth for tin 12*l.* per fathom. The 170, on the north part of the great lode, is driven west from the cross-cut 5 fms., and is worth for tin 16*l.* per fathom.

Flat Lode: The 170 is driven west from cross-cut 8 fms.; this end is not so good as when last reported on, but the lode has a good appearance, and at present is worth for tin 10*l.* per fathom. The 170 is driven east from cross-cut 2 fms., and is worth for tin about 12*l.* per cubic fathom. At the 150 we have three stopes working in the bottom, worth on an average for tin 12*l.* per cubic fathom.

South Lode: The 170 is driven west from the eastern cross-course 5 fms., and is worth for tin 8*l.* per fathom. The 160 is driven east from the cross-cut 60 fms., and is worth for tin and copper 10*l.* per fathom. In the 150, east from western cross-course, we have two stopes working east and west of Woolcock's winze, worth for tin and copper 10*l.* per fathom each stope. The 140 is driven west from Tredinnick's winze 19 fms., and is worth for tin and copper 12*l.* per fathom. In the 140 we have three stopes working, worth on an average for tin and copper 10*l.* per cubic fathom each stope. The winze in the bottom of this level since our last report is communicated with the 150; we are now stoping east and west of the winze. We have five tribute pitches working on tin and copper at tributes varying from 7s. 6d. to 13s. 4d. in 1*l.*

Western Shaft: In the last three months we have done very little in the shaft by reason of the wet season.—JOHN MAYNARD, Manager; CHARLES BISHOP, WILLIAM TIPPETT, Agents.

## ROMAN GRAVELS MINING COMPANY.

At the meeting of shareholders on Tuesday the following report from the directors will be read:—

The sales of ore have been 1955 tons, for 20,166*l.* 15s., and 170 tons of blende for 516*l.* 10s., together 20,683*l.* 5s. These sales are set out in detail, and it will be seen that, in compliance with a wish expressed at former meetings, 180 tons a month were regularly sold down to October, when the directors decided to retain their produce for a time. During the months of November, December, and January 290 tons of ore were sold by private contract, at rather over an average of 10*l.* a ton, and the company's financial year to Feb. 28 closed with a sale of 200 tons, at an unexampled low average of 8*l.* 13s. 4d. a ton.

The monthly mines cost has amounted to 16,143*l.* 10s. 1d., against 17,463*l.* 3s. 7d. the previous year, the royalty to 1694*l.* 19s. 8d, and the expenditure upon rock drill and pit-work for the new shaft to 1033*l.* 5s. 4d.; the other items in the accounts are of the usual character.

The report from Capt. Waters enters fully into the present position and future prospects of the mine, and is most encouraging; to this report the directors have nothing to add.

The directors hope to be able before the general meeting to declare a dividend.

In accordance with clause 74 of the Articles of Association Mr. Stephen Olding retires from the direction. He offers himself for re-election to the seat thus vacated. Mr. Peter Watson offers himself for re-election as auditor of the company.

[For remainder of Meetings, see to-day's Supplement.]

# FOREIGN MINES.

ST. JOHN DEL REY.—Telegram from Morro Velho, dated Rio de Janeiro, April 21: Produce eleven days, first division of April, 13,250 oits.=513*l.*; yield, 6·2 oits. per ton. Profit for the month of March, 810*l.*

RICHMOND CONSOLIDATED.—Telegram from the mine at Eureka, Nevada: Week's run, $50,000, from 816 tons of ore. Doré bars from refinery, $30,000. Shaft broke: one day lost.

— The following telegram was received on April 21 with reference to the fire at Eureka, Nevada:—Half Eureka burnt; Richmond works safe; furnaces running.

— R. K. Morrison, March 31: I am sorry to inform you that Mr. Rickard is unable to write as usual, as he has been confined to the house for the last week, and probably will have to remain there a week longer. He met with a slight accident about a week ago, and, taking cold in the wound, it has resulted in his having a slight attack of erysipelas, which, although not as yet very serious, has closed his eyes. He informs me that there is nothing particularly new in the mine, the ore bodies looking and yielding fully as well as when he made his last report.

— R. Rickard, April 4: To-day is the first time I have been able to sit up to write for the past 12 days; I have been laid up with an attack of erysipelas in my face, for two days I was nearly blind, it was caused by a fall I had from my buggy in coming from the mine. I am now improving fast, and hope to be out again in a few days. During the past week operations in the mine have been carried on with usual regularity. The 400 quartzite drift has been extended 27 feet without any material change, the quartzite varying from a few inches to the full size of the drift. The 400 north drift from cross-cut has been advanced 20 ft. in broken limestone, with occasional stones of ore. The 600 drift, north on fissure, has been advanced 39 ft. in very favourable ground for ore. The 600 south cross cut has been drifted 25 ft. in very favourable ground; the present end is not looking quite so well. The 900 north cross cut has been drifted 34 ft.; the present end is in quartzite. There is no particular change in the chambers, they are all about the same as when last reported on. The furnaces are doing very well, and all the machinery, both in mine and smelting works, is in good working order.

BLUE TENT.—D. T. Hughes, March 29: We have had one more land slide on ditch, but all is right again, and a good stream of water at Tent. We are piping our utmost both at South Yuba and Gopher claims. Our large powder drift is completed; are now constructing the powder chamber, which will be completed the coming week. The water flume is finished and working; it is 984 feet long, 38 in. wide by 26 in. high. This I hope will secure us from further land slide troubles for some time to come. Everything running smoothly at present all round.

EBERHARDT AND AURORA.—Extracts from Captain Drake's letter, dated April 3: Eberhardt Drift: We have passed through the broken ground, and are now in very hard limestone, consequently we can make but slow progress. The broken ground continued along the course of the drift for 74 ft., at which point we passed through it, leaving it to the south. I will write you more fully upon the workings in my next week's letter. The total length of drift on March 22 was 545 ft., and the distance run for the week ending March 29 was 25 ft., making a total distance up to March 29 of 570 ft.

ISABELLE (Gold and Silver).—Lewis Chalmers writes, March 31: Enclosed is foreman's report. He expects, you will see, to be ready to start machine drills next week. Until we have had a week or ten days to get our men in training at the drills we cannot expect to get the full benefit from their use; after that I hope even with only two drills to make well on to 300 ft. per month.—Foreman's Report: I herein submit my report for the week:—Total distance from monument to face of tunnel, 159 ft.; distance run in, 9 ft.; total number of days work, 24. Rock has been hard dialling, but blasted well. Am about ready to set up timber and lagging at mouth of tunnel. Brickwork on boilers will be completed on Monday night. All work progressing favourably. Am in hopes to start machines in a week.

SANTA BARBARA (Gold).—Mr. Hilcke, Pari, March 16: During February 1107 tons of mineral were stamped, producing 4135 oits. of gold, and 58 tons of refuse sand re treated, yielding 29 oits. of gold, or a total of 4164 oits. of gold, equivalent to 3·761 oits. per ton of stone stamped. This produce of 4164 oits., valued at 8s. 6d. per oitava, amounts to 1769*l.* 14s., and the estimated working cost for the month, at exchange 21¾d., being 955*l.* 0s. 4d., which leaves an estimated profit of 814*l.* 13s. 8d. for February. Mr. Hilcke reports that the lode had undergone some alterations since last advised; at No. 5 stope a channel of lode of inferior quality had been met with in about the middle of the stope, still, although it reached to the top of the stope, it did not extend downwards, and appeared to be a mere bunch; this channel would doubtless die away again, but while it lasted its effects were felt adversely. The lode in the bottom of No. 5 stope continued to be of good quality, as also was that at No. 6 stope. In the bottom of the shaft the lode was increasing in size, and wider than Mr. Hilcke had ever seen it in any part of the mine, it averaging from 14 to 15 ft. wide, which looks well for future operations here. The short month had told unfavourably on the output. The mine captain reports that the quantity of ore raised during the month amounted to 1385 tons, of which 278 tons were rejected as refuse stone, and 1107 tons treated at the stamps, 58 tons of refuse sand re-treated by the pulveriser producing 28 oits. of gold. Average quantity of ore raised per bores for the month, 31·4 tons, or per hole bored, 0·653 tons.

PITANGUI (Gold).—Mr. Treloar (Pitangui, March 17) reports that there had been no improvement in the weather since the date of his last advices, it continuing extremely wet, which seriously affected the operations at the mine. The level from the No. 2 shaft to the lode had to be suspended on March 8 in consequence of the quantity of surface water passing down through the old workings above, and until the rains cease, and the ground drains to that depth, it would not be practicable to resume operations in the shaft. The force meantime is employed putting up the rise from the adit, and cleaning out Hoskin's level for shallow drainage. In addition to this work the force was reopening the shaft on Dias' vein, which is the next above Ouro Podre, and was, it is said, left rich at water level. Parties formerly employed at the mine are sanguine that there will be no difficulty in getting to the Dias' vein now, and that good results will be forthcoming. Should, however, the latter expectation not be verified the work will not be thrown away, since this shaft will be of great service hereafter for ventilation.

MINERAL HILL.—March 29: Mineral Hill: Our operations at the North Giant have yielded quite a number of tons of low grade ore, but we cannot break it fast enough. I intend to run a short level through it to find out the amount of quartz and its dip. On the Pognonip the bottom of the shaft is altogether in iron now. The level north of Taylor tunnel is in precisely the same ground at a much lower depth.—Union District: The winze in the bottom of the 100 ft. level is down 28 ft. The vein is 4 ft. wide, showing pretty fair ore in some places.

CAPE COPPER.—The mine agents write of the Ookiep Mine:—The 80 fathom level east, from No. 24 winze, has greatly improved since our last report; the present end is worth 3 tons of copper ore per fathom. There is also a slight improvement in the 68 south, from No. 21 winze; the present forebreast is worth 5 tons of copper ore per fathom. They also remark favourably of the Spectakel workings. Bill of lading received for 640 tons, per Hinda.

SENTEIN.—The manager's report (April 19) states that we are sorry to say we have had bad weather during the whole of this week—continuous falls of snow and rain—which have caused us considerable delay and inconvenience in our out-of-door work, but it has not interfered with our mining operations. At the mine there is no change to report. The lode in No. 4 St. Eugene level is as rich as ever, and we have broken from here in five days (there being a holiday on Monday) about 35 tons of very good ore, and from the stopes in No. 3 level about 40 tons, making a total of ore broken for the week of 75 tons, with about twenty miners employed. At the Board we have brought up the whole length of the dressing-floors (No. 1) a drain to take off the water from the floors, and we have now a full force of masons and labourers preparing for the erection of a series of buddles, &c., and making a large floor to contain several hundred tons of dressed lead and blende, and the carpenters are laying down the usual dressing appliance, ties, &c. The big launder is nearly completed, and it will be fixed in a few days. At No. 2 dressing-floors we have put in some hand jigging hutches, and are now overhauling the turbine which is to drive No. 2 crusher. We are also employed in preparing a large shed to cover these floors. The whole of the dressing machinery is in an advanced state, and in a very short time we shall commence. Total quantity of ore raised to date 2150 tons.

LINARES.—April 16: In the 115, east of Warne's, we have cut into the north part of the lode; it contains a little ore, but not sufficient to value. In the 135, south of Peill's, good progress is being made. The lode in the 120, west of Peill's, is large and strong, consisting chiefly of carbonate of lime, and yielding fine lumps of ore, worth 1½ ton per fathom. In the 90, west of Peill's, there is a regular and well-defined lode, yielding 1 ton per fathom. The lode in the 120, east of Peill's, is improving, now valued at 1 ton per fathom. The 105, east of San Francisco, is opening up a good length of ore ground, producing 2 tons per fathom. Peill's engine-shaft, below the 135, will be deep enough for bearers and cistern by the end of the month. In No. 229 winze, below the 100, the lode has fallen off a little during the past week, now worth 1 ton per fathom. No. 230 winze, below the 100, is going down in a large and productive lode, yielding 3 tons per fathom. The lode in No. 231 winze, below the 90, is a little smaller than it was, valued at 1 ton per fathom.—Quinientos Mine: The lode in the 100, east of Taylor's, continues unproductive. In the 90, east of Taylor's, the lode is moderately easy for driving through, but it does not contain ore enough to value. The lode in the 80, east of San Carlos, is improving, valued at 1 ton per fathom. In Buzza's winze, below the 80, there is a large and kindly lode, consisting of carbonate of lime and lead ore, worth 2 tons per fathom. The lode in Boundary winze, below the 50, is compact and regular, and of a promising appearance, yielding 1 ton per fathom.

ALAMILLOS.—April 16, The lode in the 20, west of San Felipe shaft, has very much improved in value, now yielding 1½ ton per fathom. In the 100, east of Taylor's, the lode continues productive and easy for excavating, valued at 1½ ton per fathom. The lode in the 100, west of Taylor's, is larger, and has a better appearance; it contains a little ore. In the 85, west of San Adriano's, the lode does not contain any ore, and is not so wide as it has been. The lode in the 60, east of San Victor, is reduced in value, but still maintains its size; valued at 1 ton per fathom. In the 70, east of San Victor, the lode is small and without ore. The lode in the 70, west of San Victor, fell off somewhat in value a few days ago, and now producing 1 ton per fathom. In the 30, west of air shaft, there is a small vein of ore, but not enough to value. In the 40, south of San Carlos, good progress is being made. The lode in the 70, west of Judd's, is small, and the stone is hard for working. In the 50, east of Judd's cross-cut, the lode is not producing so much ore as when last reported on; still worth ¾ ton per fathom. The 115 cross-cut, south of Taylor's engine-shaft, is being pushed on as fast as possible. The lode in Fernandez' winze below the 85 is large and promising, yielding 1 ton per fathom. Prim's winze below the 40 has passed through a rich lode in the past fortnight, valued at 2 tons per fathom.

FORTUNA.—April 16: Canada Incosa: In the 120, west of O'Shea's, the lode is open and easy for driving, and contains good stones of ore, yielding 1 ton per fathom. The lode in the 50, west of Abercrombie's, contains good stones of ore, but not enough to value. In the 60, west of Abercrombie's, the lode is slightly improving, valued at ½ ton per fathom. The lode in the 50, east of Abercrombie's, is unproductive at present. In the 70, west of San Pedro, the lode is changeable, and now less productive than it has been for some time past, worth 1½ ton per fathom. The lode in the 80, west of San Pedro, is large and regular, with good lumps of ore, producing ½ ton per fathom. In the 80, east of San Pedro, the lode is disarranged and of no value. The lode in the 70, east of San Pedro, has fallen off very much lately. In the 120, east of O'Shea's, there is a large lode, consisting chiefly of calcareous spar and stones of ore; valued at ¾ ton per fathom. The 100, west of Lownde's, continues unproductive. The 100, east of Lownde's, is being driven north on the east side of the cross-course in search of the point of the lode; the throw is about 14 metres. In the 90, east of Caros, the lode is disarranged by strong joints crossing the end. The lode in Lorne's winze below the 80 is diminishing both in size and value; now worth ¾ ton per fathom. Canulos winze below the 70 is a new winze, and situated west of San Pedro shaft, and in advance of the 80; lode yielding ¾ ton per fathom.

Los Salidos: In the 160, west of Taylor's, the lode is smaller and less productive than it was, worth ½ ton per fathom. In the 160, east of Taylor's, a great length of valuable lode was laid open last month, yielding 2 tons per fm. The lode in the 45, east of Taylor's, is still a very fine lode, but not so rich as it was, valued at 2½ tons per fathom. In the 130, east of Taylor's, the lode is disarranged by the main cross-course. The lode in the 120, east of Cox's, is productive and promising, worth 3 tons per fathom. In the 110, east of San Miguel, the lode is rather small at present, but is comparatively easy for driving; valued at 1 ton per fm. The lode in the 80, west of Palgrave's, is small, and at present of no value. In the 80, east of Palgrave's, the lode is smaller, and scarcely so productive as it was, yielding ¾ ton per fathom. San Pablo's shaft below the 110 is holed to the 120. The lode in Linare's winze, below the 130, is small and unproductive. The usual weekly weighings of ore were kept up very regularly in the past month, and the stopes continue to yield fairly well at present. The works at surface are going on very steadily, and the machinery is in good working order. We estimate the raisings for April at 300 tons.

R. B. HARPER,
MINING ENGINEER,
Will SUPERINTEND or EXAMINE and REPORT on MINES on the PACIFIC COAST. Having had 14 years' experience in Gold and Silver Mining in Mexico, California, and Nevada. Government Mining Engineer for the Province of British Columbia.
Any communications may be addressed Room 49, Nevada Block, San Francisco, California.

# Cwm Brwyno Lead Mining Company

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## CAPITAL £30,000, IN 15,000 SHARES OF £2 EACH.

FIRST ISSUE OF 3000 SHARES AT PAR.

This company has one of the very best mines in Wales. And the fact of its being already *thoroughly developed and worked entirely by water power* only, should be sufficient to recommend it to investors.

The miners are now breaking down rich ore in several of the levels, and it is estimated that over £30,000 of ore can be got and dressed from what is in sight. There are two lodes in the sett untouched besides the one now opened, so there is an ample field for 20 or 30 years' working, and with the skipway renewed on the double principle, so as to facilitate the drawing of the ore, and improved dressing machinery, 100 tons of lead per month can be sent to market *at a small cost compared with those mines which are worked by steam machinery.*

Application for prospectuses and shares to be made to the Secretary, at the offices of the company, 14 and 15, St. Swithin's-lane, E.C.; or to any of the Branches of the National Provincial Bank of England.

EXTRACT FROM MANAGER'S REPORT MADE TO THE DIRECTORS AT THEIR BOARD MEETING, ON THE 2ND INST.

"I have to report that Cwm Brwyno, after long quietude, is now actively at work. The weather having improved, so as to enable us to get water from the mountains, we have now all the wheels at work, and shall go on dressing as quickly as our present inferior dressing machines will allow; but we can never expect to make large returns till we get the new machinery erected, the importance of which I cannot too forcibly impress on the attention of the directors. The 80 fm. level end driving now continues to improve, and is already in a good course of ore intact from the 56 fm. level. The 80 fm. level stope is also good working for silver ore (samples of which you have before you, showing a much larger proportion of silver than that assayed). We are not at the 92 fm. level yet, but by continual pumping we must reach it in a day or two."

EXTRACT OF REPORT, APRIL 8.

"Since my last report of the 2nd inst. the water has been forked down to the 104, at which level, and also in the 92 west, lead ore can be seen worth 4 tons to the fathom. The machines are now busy dressing the ore on surface, and we shall have a parcel of 30 tons for sale this month, and every month will find an increase in our production."


## Registration of New Companies.

The following joint-stock companies have been duly registered:—

GLAMORGAN CONSOLIDATED LEAD MINING COMPANY (Limited).—Capital 30,000*l.*, in shares of 1*l.* To purchase or otherwise acquire the right to work the Llan Gan Lead Mines, near Cowbridge, Glamorgan, with the machinery and all other appurtenances. To acquire any other lands, mines, mining property, ore, machinery, plant, &c. To dress, smelt, crush, or refine the ores and minerals of the company, and to realise and deal with the products of the property of the company. The subscribers are—N. L. H. Clark, Teignmouth, retired lieutenant R.N., 50; F. Nesbitt, 218, Cornwall-road, J.P., 50; J. W. Duncan, 1, Circus-place, secretary, 50; H. Wright, Birmingham, gentleman, 50; W. A. Barron, Richmond Hill, C.E., 50; Sir H. Elphinstone, 11, Waterloo-place, Bart., 50; S. Ford, 125, Amhurst-road, accountant, 1. The first directors shall be Sir Howard Elphinstone, Bart., Messrs. Wright, Duncan, Nesbitt, and Barron. Remuneration one guinea for each attendance, one guinea extra exclusively for the Chairman at each meeting, also directors' travelling expenses, and such additional amount as may be voted by the shareholders.

MISSOURI LEAD MINING AND SMELTING COMPANY (Limited).—Capital 90,000*l.*, in shares of 10*l.*, of which 4500 shall be preference 10 per cent. shares. To carry into effect an agreement made between the Virginia Lead Mining Company, N. Sands, T. A. Sands, G. Hopkins, and A. W. Marriott for the company. To purchase or otherwise acquire and work any mines, minerals, mining rights, lands, hereditaments, and chattels in the State of Missouri, in the United States of America. To work the Virginia, St. Clair, and Puivy Mines, and any others. The subscribers (who take one share each) are—G. Hopkins, 30, Parliament-street, C.E.; S. Pope, 38, Parliament-street, Q.C.; D. Panish, 13, Albermarle-street, gentleman; G. Seymour, jun., 6, Great George-street, mining engineer; G. Salmon, 30, Great George-street, solicitor; F. A. Sands, 21, Langham-street, gentleman; A. Sims, 12, Wilkinson-street, gentleman. Director's qualification 30 shares. Until directors are appointed the subscribers shall be deemed the directors.

THE DEVONPORT PUBLIC HALL COMPANY (Limited).—Capital 12,000*l.*, in shares of 5*l.* To erect a public hall in Devonport, with shops, offices, rooms, and conveniences by way of basement, and to let out on hire said hall, shops, offices, &c. The subscribers are—Sir John St. Aubyn, Bart., Cornwall, 200; W. Hodge, Devonport Bank, 100; E. St. Aubyn, Stoke, Devonport, 60; J. May, Devonport, 100; J. Venning, Devonport, 20; C. Croydon, Devonport, 20; J. P. Goldsmith, Devonport, 20; R. J. Smith, Devonport, 20; A. H. Sims, Devonport, 20; R. Watts, Stoke, Devonport, 20; D. Sale, Devonport, 20.

LIFT AND HOIST MANUFACTURING COMPANY (Limited).—Capital 10,000*l.*, in shares of 5*l.* The acquisition of the goodwill and business of F. W. Giebeler, to carry out and develope same, and the acquisition of any patents and inventions relating to the manufacture of lifts, hoists, &c. The subscribers (who take one share each) are—W. J. Taylor, Barnes; J. H. Swinburn, Wood Green; B. Hembry, 91, Newgate-street; W. Thresher, New Wandsworth; E. A. W. Taylor, Barnes; E. Bennett, Stoke Newington; T. Hands, 14, Coleman-street.

REAL AND LEASEHOLD ESTATES INVESTMENT SOCIETY (Limited).—Capital 30,000*l.*, in shares of 10*l.* The purchasing of landed property, buildings, &c., and their development, sale, or other disposition. The subscribers (who take one share each) are—S. H. Burbury, 1, New-square; H. R. Droop, 1, New-square; R. C. Dudley, 31, Lansdown-road; E. A. Hadley, 6, Stone Buildings; A. W. Hunt, Campden Hill; W. Rawlins, 3, New-square; T. Webster, 43, Lincoln's Inn Fields.

THE LONDON GLASS BOTTLE COMPANY (Limited).—Capital 10,000*l.*, in shares of 5*l.* To acquire the premises situate at 24, Cranmer-road, Brixton, and 1, Occupation-road, Manor-place, Walworth, belonging to Messrs. Slatter and Wildes, and to carry on the trade of glass bottle manufacturers, &c. The subscribers are—G. de Witte, 31, Kensington-square, 1; R. Hodgson, Balham, 1; H. D. Wildes, Larkfield, 2; W. Jones, 45, Finsbury-square, 1; C. Wildes, Forest Hill, 5; J. Wilson, 32, Wandsworth road, 2; J. Slatter, Brixton, 5.

THE LONDON SOUTH AFRICAN BREWERY COMPANY (Limited). Capital 10,000*l.*, in shares of 10*l.* The acquisition from Messrs. W. Munro and R. C. Green of the exclusive supply of apparatus and materials for the manufacture of beer under their patent process, and for the sale of the same in South Africa. The subscribers (who take one share each) are—J. Green, Crown-court; R. G. Hall, St. John's Wharf; J. E. Newsom, Forest Hill; J. C. Green, 2, West-street; A. Lubbock, Barnet; E. A. Kingsford, Upper Clapton; R. Wheeler, Croydon.

RICHARD WATERS AND COMPANY (Limited).—Capital 20,000*l.*, in shares of 10*l.* The carrying into effect an agreement, and the purchase and carrying on the lighterage business of R. Waters, Limehouse, and 90, Lower Thames-street, and any other similar business. The subscribers are—J. A. Bailey, 120, Cannon-street, 25; H. W. Brown, 124, Lower Thames-street, 25; J. S. Ditmore, Mincing-lane, 25; T. Greenwood, Brixton, 25; T. Greenwood, jun., Brixton, 10; G. W. Shore, Denmark Hill, 25; Richard Waters, 90, Lower Thames-street, 125.

ARMY AND NAVY PROVISION MARKET (Limited).—Capital 100,000*l.*, in shares of 5*l.* To carry on the business of general dealers, for supplying its shareholders, subscribers, and friends with meat, fish, poultry, game, dairy, produce, &c., not supplied by the Army and Navy Corporation Society or the Junior Army and Navy stores. The subscribers (who take one share each) are—Major-General E. K. Money, East India Club; Capt. A. H. Gilmore, R.N., Junior Carlton Club; E. B. Snow, Army and Navy Club; F. G. Stewart, 14 St James's-square; W. W. Taylor, 13, Ludbroke Gardens; C. W. Steeman, 168, Warwick-street; J. T. Fitzmaurice, Maidenhead; H. B. Chalmers, Brighton.

## FOREIGN MINING AND METALLURGY.

A contract for 10,000 tons of steel rails has been let by the Great Central Belgian Railway Company to the Angleur Steelworks Company. The contract price is 5*l.* 0s. 10d. per ton taken at the Angleur Works, and deliveries are to be made as follows:—2000 tons in 1879, 4000 tons in 1880, and 4000 tons in the first six months of 1881. Payment is to be made for each instalment a month after delivery. This contract is not only an advantageous one for the Grand Trunk Company, but it seems to indicate that the proprietors of certain steelworks in Belgium have but little confidence in a revival in prices, say in the course of the next two years. It should be observed, however, that the Angleur Steelworks Company has just purchased from Messrs. Bolckow, Vaughan, and Co. (Limited) the Thomas and Gilchrist process for the dephosphoration of pig; the Angleur Company is accordingly discounting in its tenders the economies which this process will enable it to realise in the manufacture of rails. There is some consternation among Belgian locomotive builders, as in consequence of an English house having contracted to supply the Northern of France Railway Company with locomotives at 50*l.* per ton, delivered at Dunkerque, the Belgian Minister of Public Works hesitates to approve the tenders recently submitted for the supply of 54 locomotives to the Belgian State Railways at 58*l.* to 60*l.* per ton.

Twenty firms and companies submitted tenders last week for the delivery of 4450 tons of steel rails to the company formed for working the Netherlands State Railways. The lowest tender was that of the Rheinische Stahlwerke Works, which offered to deliver the whole lot at 26,236*l.*, after calculating the exchange, about 4*l.* 19s. 2d. per ton delivered at Tilbourg. The next lowest tender was that of Messrs. Bolckow, Vaughan, and Co. (Limited), who required 5*l.* 4s. per ton delivered at Tilbourg.

Contracts have been let this week for 291,700 tons of coal required for the Belgian State Railways. The condition of the Belgian coal trade is very dull and sombre, as in addition to a contraction of sales, strikes have still further complicated affairs. The Levant du Flénu, the Produits, and the Belle-et-Bonne Mines have all been the scene of unfortunate industrial conflicts of this description. An explosion of fire-damp has also occasioned considerable consternation in the Mons district. The disaster occurred at the Agrappe Colliery at Trameries, the number of victims exceeding 100. The cause of the explosion is unknown. A somewhat similar accident happened at this colliery three years since. The value of the exports of coal from Belgium in February this year exceeded the corresponding value in February, 1878, by 81,240*l.* The accounts of the Peronnes Company for 1878 show that the company's operations were attended with a loss of 10,529*l.* last year.

The manufacture of steel rails has been commenced at some new works established in the village of Alexandrovsky (Russia).

A general strike has broken out among the 7433 workmen employed in the collieries at Flenu and Belle-et-Bonne, in Belgium. They ask for an increase of their wages, which at present range only from 2 f. to 2 f. 50 c. a day.

The boring of an artesian well for the purpose of investigating the nature of the chalk layers through which the submarine tunnel between England and France is to pass was resumed on the French coast at Sangatte on March 1 last. The depth of the well, which at the end of last year was 34·35 metres, was extended to 38·50 metres—that is, to a depth corresponding to 8·67 metres below the low-water level. At this depth the flow into the well amounted to 1300 litres per minute, and the exhaust machines became insufficient.

There has been a general tendency to improvement in the iron trade of the French department of the Haute-Marne; transactions have been well sustained, but no advance has been reported at present in prices. In the Meurthe-et-Moselle a rise is spoken of; orders for pig at 2*l.* 3s. 3d. per ton have been refused, as sellers have been standing out for 2*l.* 4s. per ton; the latest price reported is even 2*l.* 4s. 10d. per ton. In the Nord the general quotation for No. 2 merchants' iron has been 5*l.* 16s. per ton, with the usual scale for class and number. In the Loire-et-Rhône the iron trade has regained more animation, both iron and plates being in more request. The directors of the Parisian Company for Lighting and Heating by Gas report that during the past twelve months the company has been enabled to obtain coal for the purposes of its manufacture upon more advantageous conditions. The directors have also endeavoured to profit from the low prices now current for coal, and have entered into contracts which assure a supply of coal during the current year at still lower rates than those prevailing in 1878. The fall of coal has, however, of course brought with it a decline in the value of the company's coke, although the late rigourous winter enabled the directors to dispose of the greater part of last year's coke production. To secure this result prices had to be sensibly reduced, so as to prevent the arrival on the company's field of operations of foreign competitive coke and coal. Steam hauling of coal on canals is attracting some attention in France, and it is stated that the system is about to be introduced between St. Omer and Bauvin, on the Neufossé and Aire to the Bassée Canals, or a distance of 37½ miles. The system will probably be introduced in other directions, so as to assure the delivery at little expense of coal from Dunkerque, Gravelines, and Calais to Douai and Paris.

CHEMICALS, MINERALS, AND METALS.—Messrs. J. Berger Spence and Co. (April 19)—Alum: Loose lump, 6*l.* 5s. 0d.; ground, 6*l.* 15s.—Arsenic: Best white powdered, 8*l.* 15s.—Borax: Refined, English, 36*l.*—Copperas: Green, 50s. 0d.; white, 8*l.* 7s. 6d.—Copper: Sulphate, 18*l.* 5s. to 18*l.* 10s.—Nitrate of Lead, 30*l.*—Saltpetre: Refined English, 23*l.* 15s. to 25*l.*—Sulphate of Zinc, 9*l.* 0s. 0d.; —Sulphur: Roll, 8*l.* 10s.; flowers, 10*l.* 10s.—Tin crystals, 5¼d. per lb.—White Lead, 20*l.*—Barytes: Carbonate, 8*l.*—Brimstone: Best thirds, 5*l.*—China-Clay, 38s. —Oxide of Zinc, 22*l.* 10s.—Talc, 5*l.*—Umber, 70s.—Charcoal: Best stick, 4¼d. per bushel; field burnt, 6d.—Globe Steam-Boiler Powder, 16s. per cwt.—Naphtha, Miscible, 60 per cent., 4s.

## Mining Correspondence.

### BRITISH MINES.

ABERLLYN.—John Roberts, April 21: The machinery is all erected, or all that will be required for some time, and from the short trial that we have made of it I have no doubt it will work magnificently, and especially the jiggers. Our arrangement has been pronounced by all that have seen it to be perfect. We have yet some little items to do, such as small launders, pieces of wood flooring, a couple of flat buddles, &c., to put down, which will take us till the end of the present week to get ready for a start. We shall start erecting the drum on the top of the incline tramroad next week, and I expect by the end of next month (May) to be ready for the first sale. Being full of blende stuff everywhere, I have taken four of the men from working on the blende, and have put two to clear the deep adit on the shale, and two to clear the No. 2 on the shale so as to commence driving these levels, as there is every probability of finding lead in both. The latter, which will be clear in another day, is a very kindly end, and I believe that in a short distance driving we shall have a good discovery of blende if not of lead. We cannot yet get into the forebreast of the deep adit. The No. 2 adit end driving on the blende is looking as well as I have ever seen it. The ground is hard and spare, which is caused for the most part by the hardness of the blende. During the past month we have driven here 10 ft., which has produced, I should say, from 7 to 8 tons of blende. The part of this lode which we are cutting through behind this end is much harder than it was last week, and the black stone which I reported then to be in the lode is disappearing, and likely to become more solid for blende. We have excavated here in the past month about 3 cubic fms., which have produced from 8 to 10 tons of blende. The winze from the No. 2 to No. 3 has been completed, and we have cut through some of the lode at its bottom. I should say that we have raised from here from 4 to 5 tons of blende. I have suspended the cutting through the lode in the bottom of the level for reasons above mentioned.

ASSHETON.—Joseph Garland, April 19: The 20, north of Gundry's, is being driven with fair speed. Two men are driving against this end south from Mawr shaft, so that we shall hole through in a very short time. The 50, east of boundary shaft, is in a stiff rock, and our progress is, consequently, comparatively slow. The lode has not been taken down since last reported. We shall commence to clear up Lindow's shaft below a point 8 fms. under adit on Monday next; the preliminary work has commenced to day. There is no particular change to notice in the various tribute pitches throughout the mine.

BETTWS-Y-COED.—H. T. Haley, April 23: The lode in the winze from the shallow adit is producing fully as much lead as at any time since commencing to sink. The lode in the deep adit is yielding good stones of lead and improving, but we shall have to drive 2 or 3 fathoms further to get out of the disordered ground, when I believe we shall have a valuable lode. The men from the 20 have been engaged in making bank for reservoir, which is now completed, and will hold a good drop of water. We started the engine, with the pitwork attached, on Saturday last, and it went off without the slightest hitch, and works most satisfactorily, but having sufficient water for the pumping wheel have not kept the engine at work. We shall get on with the cage and poppetheads for winding as quickly as possible. We are getting on fairly on the dressing floors, and will send out samples of 20 tons of ore on Saturday next.

BLAEN CAELAN UNITED.—J. Pell, April 24: Once again a change has taken place in the weather, and I hope the snows and frosts are over for this season. We are able to do our outdoor work in comfort; the new floorings are getting into good order this week; all we want now is a better price for lead to justify our raising large quantities of ore instead of limiting our operations to the stuff from driving and sinking. The 30, driving east, continues very hard; we have taken some more lode down this week, and it contains good lead, and the course of ore we sank in from the 20 down to the 30, and afterwards drove upon 5 fathoms west, does, I have no doubt, hold on continuously; there is a sameness in the matrix and character of the lode, and the ore ground is, therefore, upwards of 20 fathoms long, and in three months' time a communication will be effected with the level driven from the winze.

BLUE HILLS.—S. Bennetts, P. Vian, April 19: The Blue Burrow shaft is holed by a borehole to the 30 east end, the shaft being a little further to the south than the dialling indicated. The stopes in the back of this level are worth respectively 8*l.* to 10*l.* per fathom.

BODIDRIS.—H. Hotchkiss, April 24: Maes-y-Pwll: The ore-bearing part of the lode continues to increase in size, and is producing lead, as reported last week; the matrix of the lode contains calamine, gossan, and carbonate of lime, altogether a fine-looking lode. I have put on an additional set of men to develope this discovery as rapidly as possible. No change in the engine-shaft sinking upon the main lode. The 45, driving east of this shaft, is letting out water, which is another sign of our being near the Craigiog lode.

CARON.—John Kitto, April 19: Since the date of my last report we have completed the new engine shaft to the 22, and have commenced to cross-cut towards the lode, which I expect to intersect in a few days from this time. The winze sinking below the 10 has greatly improved, and is now worth fully 30 cwts. of lead ore per fathom, but the water is very quick, and interferes considerably with our progress; this, however, in all probability will be drained immediately the lode is intersected in the 22. The stopes above the 10 are without change to notice, and there is nothing else new in any other part of the mine. Dressing operations have been resumed since the frost disappeared, and we have sampled another parcel of lead ore (30 tons) for sale on the 24th inst.

CLEMENTINA.—J. Roberts, W. Sandoe, April 23: We are getting on very well with the erection of the large wheel and other things in connection with the new work.

COMBMARTIN.—T. Harris, T. Comer, April 19: The lode in the north-west end on caunter lode is very large, and the part carried during the past week or two has been on the footwall part, where we expected it would have proved the best part of the lode, but we have not found it so, and we have decided to cut in towards the hanging part again, in which we have found good lead from time to time, and we hope to meet with a better lode very shortly. We have suspended the driving east of the adit cross-cut, as the lode has been unproductive, and put the men to sink a winze below the adit level on the caunter lode, from which we hope to report something good very soon, as we passed through a good run of leady ground in driving the level. The ground in the adit cross cut is of much the same character as for some weeks past.

CWM BRWYNO.—April 25: In stripping down the lode on the south side of the 92, 40 fms. east of engine shaft, it presents a most masterly appearance, producing ½ ton per fathom In the stope in the back of the 92, 6 fms. west of engine-shaft, we are breaking 15 cwts. of silver-lead ore per fm. No. 1 stope west, in the 92, is yielding 1½ ton of high-class ore per fathom. No. 2 stope in ditto yields 4 tons of silver-lead ore per fathom. The 80, driving east, has continued good in appearance, still yielding 1½ ton of ore per fathom; this is intact up to the 56, and large returns of ore will be received from this point. The lode in the new level driving in the 92, on the new south branch (Powell's lode), is 4 ft. wide, composed of light colour killas, carbonate of lime, spar, and silver-lead ore, embedded between two well-defined walls, promising well. This is one of the most important features in the mine, is in virgin ground from this place up to the eastern boundary, and also up to surface; when the Powell lode is reached it will probably make a good paying mine of itself, and in driving it is now yielding 15 cwts. of ore per fathom. The three stopes in the back of the 80 are producing 12, 15, and 18 cwts. of silver-lead ore per fathom respectively. Altogether we are looking well, and dressing is regularly and satisfactorily progressing; and, from the large stores of ore in sight, we cannot fail to make an increase in our monthly sales.

DE BROKE.—J. Phillips, April 23: The 55 driving east has a more favourable appearance: the lode is opening out wider, with vughs cased around by crystallised quartz and calc-spar, and with good branches of ore at times. The stope east and west of winze below the 25 is producing from 20 to 25 cwts. of lead ore per fathom. The stope in the 25 east still opens out good paying ore ground. The tribute pitch under the adit is without change. The prospects of the property are rather improved, and I hope soon to be able to report further discoveries of mineral. The surface work and machinery are going on steadily, and we have made satisfactory progress with dressing lead ore for the next 20 tons sampling.

D'ERESBY CONSOLS.—John Roberts, William Sandoe, April 21: During the past month we have driven in the end towards Cobbler's lode a little over 3 fms. The ground has been moderately easy for driving, but there is nothing remarkable in the appearance of the lode, only the footwall is nearly upright, which we always like to see, as it is more likely to be productive. We did not reckon on finding this east and west lode very productive, but our object is to reach the Cobbler's lode, which was so rich from surface as far down as they could follow it without having the water drained by some means, and with this object the deep adit was driven 230 fms., and now continued by us, and is within a few fathoms of the lode.

D'ERESBY MOUNTAIN.—J. Roberts, W. Sandoe, April 23: During the past few days the lode in No. 1 adit has been rather smaller than it had been previously, but to-day it shows an improved appearance, and is likely to open out again. In No. 2 adit the lode has pretty much improved during the past week, and is now a very nice looking lode, and is yielding good blende and a mixture of lead ore. I am glad to say the sump in the bottom of this No. 2 level has been holed through to the rise in the back of No. 3 adit; this will improve the ventilation in No. 2, and also give good ventilation in No. 3 adit, the forebreast of it being only 4 fathoms south of the rise. It also has cut out for us a piece of stoping ground, which from present appearances we have reason to believe may turn out a good deal of lead ore. From No. 3 adit to No. 2 adit the height is 14 fathoms; the former workers sunk a sump about 6 fathoms below No. 2, and then stoped away the ends of it for about 6 to 8 fathoms in length, and this, with a little stoping in the roof of No. 2, just about a corresponding length and height, we are told from the parties who worked there produced 80 tons of lead ore. They had not only to draw up the stuff from this stope in the bottom but had a good deal of water to contend with as well, and the place badly ventilated, whereas we now have no water to contend with, and can let the stuff fall down in the tramway at No. 3, and have the place well ventilated, and we, therefore, look most hopefully to the results which may follow. The little steam-engine for winding and pumping at Gorse shaft works very well indeed. We have made a good start in sinking, and have got down 7 to 8 ft. this week, but as we are now setting near to No. 5 we find some of the ends and sides rather crushed, and require to be carefully timbered, &c., but we hope at least to get down to No. 5 in a few days. In No. 5 adit we have cleared 4 fathoms this week; the ground here also requires to be more carefully timbered this week, being in the midst of a heavy fall. The dressing is being carried on with regularity. The stuff has been rather coarse, but we are glad to say that we are now getting on better, and we look very hopefully to the future.

DERWENT.—J. Morpeth, April 22: Herewith I beg to hand you a list of bargains let on Saturday last, with estimate of ore, &c.—Jeffries' Shaft—Sun Vein: The stope over the 70, on this vein, 24 fathoms east of the shaft, is set to four men, at 81s. per fathom; vein 3 ft. wide, and worth 15 cwts. of ore per fathom. The tribute pitch set last month on this vein, under the 40, east of Taylor's, at 5*l.* 10s. per ton; this setting has been abandoned by the takers as not wageable. —Westgarth's Shaft—Middle Vein: At and over the 90, east of shaft, we have set seven bargains—No. 1, cutting sides 105 fathoms east of shaft, to six men, at 95s. per fathom; vein worth 20 cwts. of ore per cubic fathom. No. 2, rising and stoping in the back of the level, 100 fathoms east of shaft, to six men, at 97s. per fathom; vein 4 ft. wide, and worth 20 cwts. of ore per fathom. No. 3, cutting sides 91 fathoms east of shaft, to six men, at 90s. per fathom: the vein is worth 25 cwts. of ore per cubic fathom. No. 4 also cutting sides, 87 fathoms east of shaft, to six men, at 90s. per fathom; worth 24 cwts. of ore per cubic fathom. No. 5, rising and stoping in the back of the level, 74 fathoms east of the shaft, to eight men, at 95s. per fathom; vein 3 ft. wide, and worth 18 cwts. of ore per

fathom. No. 6, cutting sides in the 93 fm. level, 69 fathoms east of the shaft, to six men, at 90s. per fathom; worth 20 cwts. of ore per cubic fathom. No. 7, rising and stoping in the back of the 93 fm. level, 48 fathoms east of shaft, to six men, at 100s. per fathom; vein 4 ft. wide, and worth 15 cwts. of ore per fathom. The 74 fm. level, 202 fathoms west of the shaft, is set to two men, at 75s. per fathom; the vein in this level is strong, and there is far more water than formerly, but at present there is not any lead ore in it. The stope over this level, 189 fathoms west of shaft, is set to four men, at 90s. per fathom; vein 3 ft. wide, and worth 18 cwts. of ore per fathom. The pumping is progressing steadily, and the accumulation of water at Jeffries' shaft and in the adjoining workings is now being brought into a much less compass.

DEVON GREAT CONSOLS.—Isaac Richards, April 24: Wheal Emma—Inclined Shaft: In the 137 east, west of Friend's cross-cut, the drivage is being continued in favourable ground by the side of the lode. In the 47 west the lode is 5 ft. wide, worth 4 tons of copper ore or 12*l*., and 3 tons of mundic per fathom. —New Shaft: New South Lode: In the cross cut south, in the 205, the main part of the lode has been cut through, which proves to be from 6 to 7 ft. wide, composed of capel, quartz, fluor, prian, and a little of both mundic and copper ores. Drivages will now be commenced on its course east and west, and, judging from the very fine masterly character and productiveness of the lode in the levels above, good ore ground may fairly be calculated upon as the levels are extended under the productive ground in the 190. In the 190 east the part of the lode carrying is 4 ft. wide, worth 4 tons of copper ore or 12*l*., and 5 tons of mundic per fathom. In Knott's winze, in bottom of the 190 east, the lode—5 ft. of which is being carried—is worth for length of winze, 9 ft., 5 tons of copper ore or 15*l*., and 6 tons of mundic per fathom. In the 190 west the lode—4 to 5 ft. being carried—is composed of capel, quartz, prian, a little copper ore disseminated throughout the whole width, and mundic, worth 5 tons per fathom. In Floyd's winze, in bottom of the 175 east, the lode—4 ft. of which is being carried—is worth for the length of the winze, 9 ft., 6 tons of copper ore of 18*l*., and 4 tons of mundic per fm. In the 175 west the lode—4 ft. of which is being carried—is worth 6 tons of copper ore or 24*l*., and 4 tons of mundic per fathom. In Hockaday's rise, in back of the 175 west, no lode has been taken down since last report. In Douey's winze, in bottom of the 130 east, the ground is favourable, and sinking is being continued by the side of the lode. At the railway shaft, now down about 12 fms. below the 160, the lode having taken an almost perpendicular dip has left the course of the shaft; sinking is, therefore, now to the south thereof, the ground proving favourable for progress and congenial for mineral.

EAST DARREN.—April 23: The cross-cut south, opposite Taylor's shaft, has been driven in the past month 3 fms. 2 ft., through ground composed of a blue clayslate and branches of carbonate of lime. The 92, east of cross-cut, on south lode, has been driven 3¼ fms., in a lode 5 ft. wide, containing branches of lead ore—saving work. The same level, west of cross-cut, has been driven 2 fms. 1 ft., in a lode rather small and unproductive. The 92, east of cross-cut, on No. 2 branch, has been driven 1 fm. 2 ft., in a lode 4 ft. wide, at present containing a little ore, but not sufficient to set a value on. The winze under the 80, east of cross cut, on junction, is now down 7 fathoms; the lode at present is disordered and unproductive. The 80, west of cross cut, on south lode, has been driven 3 fms. 1 ft., in a large lode, laying open stoping ground; present value, 12 cwts. of lead ore per fathom. The stopes and tribute pitches are yielding fair quantities of lead ore. The machinery is in good order. Dressing is steadily pushed forward, and we hope to sample on Tuesday next, the 29th inst., 45 tons of silver lead ore.

EAST ROMAN GRAVELS.—Arthur Waters, April 24: The shaftmen are fixing a drawing-lift at the 86, preparatory to sinking below that level. We shall fix penthouse, &c., and begin to sink some time next week. The lode in the 86, south of shaft, is 4 ft. wide, worth ¾ ton of lead ore per fathom. No. 1 pitch in bac of the 75 is worth 2½ to 3 tons per fathom. All the other pitches are yieldin ore as for some time past. We shall sample 20 tons of blende next week.

FRONGOCH.—John Kitto, April 19: During the past month we have made very good progress in Vaughan's new shaft, and are still pushing on the same with all possible speed. We are fixing the new lifting gear, and shall soon be able to send the men up and down to and from their work, which will effect a considerable saving in time. The winze sinking below the 142 is still in very good ore, and the cross-cut north from the end of this (142) level is not yet through the lode, but is in 18 ft., and still yielding good lead. The same level west is being driven by a full set of men, and is now within 8 or 10 fms. of the bunch of ore which has proved so productive in the levels above, and has been worked away nearly up to surface. The 90 east is being driven in a very good lode of lead, and has greatly improved during the past month. We are also driving a cross-cut in this level to intersect the north part of the lode which has produced the ore in the upper levels, but the ore we have in this level, and on which we are driving, is on the south part of the lode, and is, so far as we can yet see, quite new. The tribute pitches are looking fairly well. Satisfactory progress is being made in the driving of the 56 cross cut towards the south lode, but there is no change in it to notice. We have cleared and repaired the outlet to one of the large reservoirs, which has been long closed, and are preparing to fix a 24-in. diameter pump for returning the water again to our large pumping wheel; most of the materials required for this have been already delivered on the mine, and no time will be lost in getting the same to work. All other surface work is being pushed on as rapidly as possible, including dressing operations, and we can sell 100 tons of lead ore whenever you consider it advisable to do so.

GAWTON COPPER.—G. Rowe, G. Rowe, jun., April 18: The lode in the 117, west of cross cut, still maintains its size and character, being over 6 ft. wide, principally composed of capel, spar, and mundic, with good stones of ore. The lode in the 105, west of cross-cut, is showing a very kindly appearance, producing 3 tons of ore per fathom. The lode in the stopes in the bottom of the 105, west of winze, is worth 9*l*. per fathom. The lode in the stopes in the bottom of the same level, east of said winze, is worth 15*l*. per fathom. The lode in the stopes in the back of the 105 is worth 8*l*. per fathom. The tribute department is without change.

GLENROY.—R. Rowe, April 22: The sinking of the shaft is going on without any interruption, and without any particular change in the lode, which is more than the full width of the shaft, and, besides a little blende, some copper has come into the lode within the past week.

GOGINAN.—April 23: The tribute pitches in the bottom of the 120 west continues to produce 15 cwts. of ore per fathom. The lode in the pitch over the 100, 40 fms. west of Taylor's shaft, is producing 17 cwts. of ore per fathom. In the pitch over the 60, 10 fms. west of Gilbertson's shaft, the lode is worth at present 12 cwts. of ore per fathom. The slime halvans dressing is being carried on regularly. During the past week the water in the pond became exhausted, and we have taken the advantage to put in a new sluice valve, and repair the frame, &c. At both ponds the frames, &c., are now in good order, but water very scarce owing to so much dry weather. We have a change now—some rain to-day. The parcel of ore sold on the 15th inst. realised 12*l*. 2s. 6d. per ton, and we have about 15 tons now broken underground and at surface.

GREAT DYLIFFE.—R. Dean: The following is a list of settings for the current four weeks:—Llechwedd-du: The 125, driving east of Bradford shaft, by six men, at 92s. 6d. per fathom. The 115, east of winze, we shall finish stripping in a few days, and resume driving, by six men, at 92s. 6d. per fathom; there is a decided improvement in the ground here, and we have a string of blende and spots of lead ore—taken altogether it looks very promising. No. 1 stope, in the back of the 95, west of shaft, is set to six men, at 45s. per fathom and 30s. per ton of ore, worth 28 cwts. to the fathom. No. 2 stope, in the back of the 95, by four men, at 50s. per fathom and 30s. per ton of ore, worth 18 cwts. to the fathom. A tribute pitch under the 125 east, by four men, at 4*l*. per ton. A tribute pitch over the 125 east, by four men, at 4*l*. 10s. per ton. A tribute pitch under the 95 east, by four men, at 5*l*. per ton. A tribute pitch over the 75 east, by four men, at 5*l*. per ton. A tribute pitch over the 65 east, by two men, at 5*l*. per ton. A tribute pitch over the 45 west, by two men, at 5*l*. per ton. A tribute pitch under the 45 west, by four men, at 5*l*. per ton. A tribute pitch over the 45 east, by four men, at 5*l*. per ton. A tribute pitch over the 35 west, by two men, at 5*l*. per ton. A tribute pitch over the 25 east, by four men, at 4*l*. 15s. per ton. A tribute pitch over the 15 west, by four men, at 5*l*. per ton.—Dyliffe: Two tribute pitches under the 65 east, by six men, at 5*l*. per ton. One tribute pitch under the 35 east, by two men, at 4*l*. per ton. Two tribute pitches under the adit east, by six men, at 5*l*. per ton. One tribute pitch over the 15, west of old shaft, by two men, at 5*l*. per ton.—Esgairgaled: Two tribute pitches under the 25 west, by six men, at 5*l*. per ton.

GREEN HURTH.—William Vipond, April 18: The end south in the 30 is not so good as we get further on; from the dip of the beds we are losing hold of the limestone, and getting more into the plate above it. There is a deal more plate rider in the upper part of the end with less ore. The ore is still good at the bottom, and I have no doubt sets down as rich as ever below in the limestone. I estimate it is yielding this morning between 4 and 5 tons of ore per fathom. The end north continues with very little change; it is still yielding 6 tons of ore per fathom. We have been putting some more air pipes into the sump, and through from the sump top to the level, to complete the air course; this has taken up some of the night shifts during the week. We have made fair progress this week with the new sump top, and shall make it much larger and more roomy than the first. Finished the delivery yesterday of the eighth wagon of ore, containing 7 tons 4 cwts.

— April 19: I was in the mine late last night to see if there was any further change in the end south, but it continues just about as described in the report. The men were busy preparing for putting in some timber, and had just cut a trench right across the bottom to lay the sole piece in; this is in a mass of solid ore, which shows that we are only getting above the best ore from the dip of the sill southward. The 6 ft. plate bed we are driving in now cannot be expected to be as rich as the limestone below, or even the hazles above.

GROGWINION.—John Kitto, April 21: There has been no particular change in any part of the mine since the date of my last report. The ends driving east, from the intermediate level down to the deep adit, have continued to yield well, and especially the two deepest—the 68 and deep adit, the former being worth at present 25 cwts. of lead ore per fathom, and the latter fully 2 tons. These two levels are on No. 3 lode, but the intermediate and 56 are on No. 4. We are sinking a winze below the intermediate level, on No. 4 lode, which is also yielding very good lead. This winze is intended for ventilation, and for opening out the ground for stopes. The water has been all drained from the eastern shaft, and we are now clearing up the stuff from the bottom with a view of sinking the same. This shaft will come down close to the present end of the deep adit level, and will thoroughly ventilate the whole of the eastern part of the mine. The stopes throughout the mine are looking quite as well as usual, and are yielding a full average quantity of ore, and I think our prospects altogether were never better than at present. We sold last week, to Messrs. Walker, Parker, and Co., 100 tons of lead ore, at 9*l*. 5s. per ton.

HERODSFOOT.—P. Temby, April 24: The ground in the 205 end south has very much improved, and the lode has again dropped in with the flookan and become more settled; this end has passed through a good run of ore ground for a great length. The lode will average 20 cwts. of lead per fathom. The stopes in the back of the 205 and 190 are worth on an average 15 cwts. of lead ore per fm. The rise over the 160 is communicated to the 147; the lode still holds good, and appears to be standing in whole ground about 9 ft. west of the cross-cut. I am still of opinion that it will hold up to the 127. Saturday next being our pay and setting, I will send a full report for next week.

HINGSTON DOWN.—T. Richards, April 23: The pitches in the back of the 120 and 110 are producing 10*l*. worth of ore per fathom. The lode in the back of the 45, in the eastern part of the mine, continues to look well, and is a good course of ore, worth 3½ tons, or 30*l*., per fathom. In the deep adit level, driving west on the course of the lode, the lode has a very promising appearance, composed of capel, quartz, mundic, and rich stones of copper ore. The ground in the deep adit cross cut south continues favourable.

LADYWELL.—Arthur Waters, April 24: The new south shaft is now 11 fms. 4 ft. below the 16; the ground is hard. The 32, north of Wetter's winze, going towards said shaft, is driven 2¼ fms.; the lode is composed of spar and stones of lead ore of a promising character. The 32, south of winze, is driven about 8 fms., and is now into a sparry orey lode 4 ft. wide, but the end has not yet reached any ore ground of value. The dip of the ore is south, at the rate of 4 to 5 ft. in 6 ft., hence we shall have to go 10 to 12 fms. in the 32 to catch the ore ground seen in the bottom of the 16. The stope in the bottom of the 16 south is worth 1½ ton per fathom. The stope in back of the same level is worth ¾ ton per fathom. The tribute pitches are rather poor. We have to-day sold 20 tons of lead ore for 166*l*. 10s.

LEAD ERA.—J. A. Ede, April 21: On Saturday, in our surface explorations, we cut the shale bed; I mention this as it confirms the statements made with respect to the analogy and consistency of the measures at Lead Era, as compared with that of the productive mines around us. It is highly encouraging to mark with what due regularity we intersect the various beds of the series intervening between us and the flat, and the favourable conditions under which they are intersected is equally significant. The number of lodes of which Lead Era is the recipient is surprising, some of great celebrity (Minera, &c.), others that may be equally as rich remain as yet in their primeval state, but to be henceforth developed from the adit level, which has been already extended to within about 40 yards of the first. The adit is being advanced at the rate of 10 fms. per month, which can shortly be increased to 15 fms. monthly. No. 2 shaft is down 13 sms. to the furrow of the bottom flat; the ground is favourable, and the Carrington lode runs immediately near, so that I am not too sanguine in expecting a deposit of ore to exist not far from this point, and from long and careful recognition of facts connected with this I invariably found the ore in these measures near the strike of a lode, so that if the number of lodes traversing this sett, their character, the two flats and the bearing zones under them are taken into consideration, it will at once be seen that this property is one of no ordinary character. The buildings are completed, and every point is progressing satisfactorily.

MARKE VALLEY.—William George, James Stenlake, April 24: The ground in the 90 west continues favourable for driving; the lode at present is rather smaller than it has been, composed of quartz, spotted with ore and mundic. In the 10 west the lode is 2 ft. wide, composed principally of gossan and a little ore, but not sufficient to value, although from present appearances we are daily expecting a favourable change. In the shallow level, driving west from the rise, we have a large gossan lode fully 4 ft. wide; here the ground is also favourable, and good progress is being made. The stopes and pitches throughout the mine are without any noticeable change since the last valuation was given. Our ore sold on the 17th instant realised about 950*l*.

MELLANEAR COPPER.—John Gilbert, April 23: The lode in the 30, west of Gundry's shaft, is 1½ ft. wide, and worth 1 ton of copper ore per fathom. The rise in the back of this level is worth fully 2 tons of ore per fathom. The lode in the 40, west of the shaft, is 1 ft. wide, and producing a little saving work for copper ore. The lode in the 60, west of shaft, on the north part, is 2 ft. wide, worth 1 ton of ore per fathom. The lode in the 60, west of shaft, on the south-east part, is 4 ft. wide, worth 3 tons of ore per fathom. The lode in the 80, west of shaft, is 4 feet wide, and worth 2 tons of ore per fathom. The rise in the back of this level is also worth 2 tons of ore per fathom. The lode in the 80, west of shaft, is 4 ft. wide, and worth 2½ tons of ore per fathom. The lode in the 90, west of shaft, is 5 ft. wide, and worth 2 tons of ore per fathom. The winze in the bottom of this level, east of shaft, is suspended, in consequence of the men having cut a stream of water, which prevented them from sinking; they are now put to rise against the winze from the back of the 100 in a lode 3 ft. wide, and worth 1 ton of ore per fathom. The lode in the 100, west of shaft, is 3 ft. wide, and worth 2 tons of ore per fathom, but it is bearing too much to the north to be the main part of the lode; we shall put the men to day to cut into the side of the level to see the south part of the lode. There has been nothing done in the 100 east for the past few days. The men have been taken to cut some ground in Gundry's shaft in the 100 for the convenience of the pitwork; this they have almost completed, and will resume their driving again to morrow morning. There is no other change to notice in any other part of the mine.

MELYNDWR.—John Kitto, April 21: We have not yet intersected the lode in the 25 cross-cut, driving north from Bowman's new shaft, consequently I have nothing whatever new to report to you. Very good progress is being made in driving, and the ground is in every respect favourable, but it is impossible to say for certain when the south lode will be reached. We are, however, expecting to cut it almost daily.

MINERAL CORPORATION OF GREAT BRITAIN.—William Bennetts, April 23: HAFNA AND HIGH HAFNA MINES: There is nothing new calling for any special remark at No. 3 adit since my last report. The lode in the end is still looking well for lead and blende ores, and letting out water freely. At surface we are getting on well with the embankments of the reservoir, and hope to have the reservoir completed in a few days. We have put in the flood hatch, and are now in a position to store the water. The smiths and carpenters are getting on with the new jiggers and other necessary work.

GREAT D'ERESBY MINE.—I am glad to inform you that the engine has arrived and is now on the mine.

BRYN CANADON MINE.—The lode in the winze I referred to in my report last week (which is on one of the east and west lodes) has very much improved during the past week, and is producing good saving lead work. The lode also presents every indication of becoming rich in depth.

MONYDD GORDDU.—J. G. Green, April 24: The 34 west is advanced within 2 fms. of the point where we expect to intersect the rich course of ore seen going down in the sole of the 24, and which was worth 2½ tons of good quality lead ore per fathom; there is about 10 fms. to drive to hole the winze now sinking below the 24, and which has carried a fair lode all the way down. When this communication is effected we shall have a fair section of ground for stoping. The 12 west continues in a good lode, worth 12 to 15 cwts. of lead per fathom, but very hard at present for exploring; I have before pointed out the importance of this discovery, as it is a new course of ore, and entirely in new ground, and no time will be lost in extending the 24 and 34 towards this point. There is no other particular change to notice, the stopes turning out their usual quantities of ore. Drawing and dressing are going on regularly, and we shall sample to-day 30 tons of ore, for sale on the 30th inst., which will make 85 tons since we recommenced dressing in February, and this, too, notwithstanding the stoppage from frost, &c.

MORFA DU.—T. Mitchell, April 24: The various points here continue to look much the same as when last reported, excepting the stope in back of the 48, where the lode is subject to pinches, and at present it is not quite so speedy for breaking. Saturday next will be setting day. The carts are busy taking down another lot of bluestone.

NORTH D'ERESBY MOUNTAIN.—William Bennetts, April 24: I am pleased to inform you that the lode in No. 2 adit end continues to look well. The part of the lode that is being driven on is fully 4 ft. wide, with a good mixture of lead throughout; in fact, all the stuff coming from the end will pay well for dressing. Such a lode as this speaks well for No. 3 level, which will come in 20 fms deeper.

NORTH TRESKERBY.—M. George, April 24: Doctor's engine-shaft is down to the 36 fm. level; we have driven west 6 ft., and shall now cut in south through the lode to see its size and value. This end will be pushed on with all speed to get back under the ore ground gone down in the bottom of the 24 fm. level. The lode in the 24 fm. level, west of engine-shaft, is 5 ft. wide, and worth 1½ ton of copper ore per fathom. The lode in the 12 fm. level, west of cross-course, is 2 ft. wide, and yielding copper ore to save. The lode in the winze sinking below the 12 fm. level, is 4 ft. wide; this winze is 6 fms. in advance of the 24 fm. level, and is improving as we sink, now worth 1½ ton of copper ore per fathom. The lode in the rise in the back of the shallow level is 3½ ft. wide, and worth 1½ ton of copper ore per fathom. Our prospects are steadily improving as we increase in depth.

PANDORA.—H. Nottingham, April 23: New Lode: The rise in the end of the 38 south, against No. 1 winze, is looking well, worth 2 tons of lead per fathom. No. 2 stopes over the 23 is worth 1 ton of lead and the same of blende to a fathom. —Goddard's Lode: The 23 going south is yielding a little lead and blende, and appears to be opening for something better. The lode appears to be split into two parts along here, and they are now too wide apart to be carried with the level. The western part we have left behind shows some nice lead, and it is quite possible this will prove to be the most productive part; this will shortly be proved. The stope over this level is worth 15 cwts. of lead and ¼ ton of blende. The same level now resumed, north of shaft cross-cut, is hard, wet, and unproductize at present. We expect to see productive ground here in advance of us. A new stope now starting in winze north of shaft cross-cut is worth 15 cwts. of lead and ¼ ton of blende to a fathom. The 23, north of shaft cross-cut, is now into a kindly lode of crystalised carbonate of lime and grit, similar to what we had with the ore above this, but we have not seen enough ore to value yet. No. 1 winze sinking below this level, south of shaft cross-cut, is producing a little lead and blende, but not to value, with ground wet and sparey for sinking. No. 2 winze, south of this, is still poor, but ground favourable for progress. Dressing and other surface work is being pushed on as fast as possible, and we are now making fair progress towards another sampling.

PARYS MOUNTAIN.—T. Mitchell, April 21: The ground in the 90 south continues hard; it consists of dark chert, with occasional patches of sulphur. The 90 east is going forward into kindly looking ground; the end is full of lodey stuff, intermixed with sulphur and a little copper ore. Saturday next will be our setting day.

PATELEY BRIDGE.—C. Williams, April 24: I have no change to report in the underground bargains this week. Everything is progressing favourably, and we are pressing forward the erection of machinery with all possible dispatch, and if all is well I hope to have the two engines erected in about a week's time, when we shall commence fixing steam and water-pipes. Fowler's men will couple the boiler and complete its erection this week.

PENHALLS.—S. Bennetts, P.) Vian, April 19: The north part of the lode has just been been reached in the rise above the 70 east end, and found small, although containing some good tinstuff. The stopes in the back of this level are somewhat improved, and are worth at present 12*l*. and 15*l*. per fathom respectively. The winze on a north lode below the 20 at the flat-rod shaft is down on a gossan; the extent of heave is not yet ascertained. The same lode below the 30 is producing some tinstuff, and of a promising character.

PENSTRUTHAL.—W. Polkinghorne, April 22: In the 34, driving east of Highburrow shaft, the lode is worth for tin 8*l*. per fathom. The winze sinking in the bottom of this level is worth for tin 20*l*. per fathom; a very promising looking lode, and if it continues as at present after a little further opening on its course we shall increase our returns of tin, which will enable us to meet the present cost. The tribute pitches, both tin and copper, continues much the same as for some time past.

RED ROCK.—John Kitto, April 18: The 72, east of old engine-shaft, is poor for lead, but I think the best part of the lode is standing to the south. We are driving our level on the north side, in order to make greater progress towards the winze which is being sunk below the 60, but we have now nearly reached this point, and shall soon cross-cut the lode. The stopes in roof of this level are looking rather better than usual. There is nothing new in the 60. We have completed the new shaft to the 22, and have commenced to drive west on the course of the lode towards the bunch of ore discovered some time since in the 10 fm. level above. The lode in the winze sinking below the 10 contains very good ore, and the stopes above the 10 are worth about 30 cwts. of lead ore per fathom. We have divided and cased the new shaft to the 22, and can now draw the stuff from there with the machine. Dressing operations are progressing satisfactorily, and we have sampled another 40 tons of ore for sale on the 22nd inst.

ROMAN GRAVELS.—Arthur Waters, April 24: We have fixed three pieces of main rods, and the men are now rearing up a column of plunger-lift from the 110 to the 65. We hope to comple the fixing of all the lifts and be able to pump the water direct to surface through this shaft in about six weeks from now. The 110, north of said new shaft, is in a lode 8 ft. wide, worth 2½ tons of lead ore per fm. The rise in this level is worth 2½ tons per fathom. The 110 south is still without much ore to value. The 95 south is going forward in a lode 7 to 8 ft. wide, worth 3 tons per fathom. The 80 south is worth 1 ton per fathom. The winze below this level is worth 1¼ ton per fathom, now down 6 fms. The 80, north of old engine-shaft, is worth 1 ton per fathom. The 65 south, on the middle part of the lode, is worth 3 tons per fathom. The stopes and other points as for some time past. We have delivered the 200 tons of lead ore sold on the 12th inst., and shall sell another 100 tons next Saturday. We are getting out the foundations for a new pair of winding engines.

ROOKHOPE.—Thomas Tonkin, April 24: Adit Level: The forebreast on side vein is worth 20 cwts. of lead ore per fathom, but the ground remains very hard. I have set 2 fms., to four men, at 65s. per fathom. I have also set some stoping ground near Gin shaft to two men, at 40s. per fathom; the ground is rather stiff for working, and is worth about 9 cwts. of lead ore per fathom.—The 15 Fathom Level: The drivage westward on side vein continues to yield 8 cwts. of ore per fm. I have set the ore ground here to four men, at 37s. per cubic fathom. I have set the rise from the 25 to the 15 to four men, for 14*l*., to complete the work; the ground produces some ore. In the drivage beneath we are following up the flat near side vein; the ground is worth 20 cwts. of ore per fathom. I have set this place to two men, at 37s. per cubic fathom of ore-bearing ground. At the pump-sump the ground is not quite so hard, and is worth 9 cwts. of ore per fathom; I have set 3 fms., to four men, at 45s. per cubic fathom. I have set the stope in the 42, near the Gin shaft, to two men, at 30s. per fathom; the yield of ore is 8 cwts. per fathom. The stope near the low shaft is very hard; I have set it to four men, at 44s. per cubic fathom, to stope and fill up the ground. I have set a rise near the low shaft to four men, at 40s. per fathom.—Dressing Operations: We are making fair progress on the dressing-floors, and the machinery is in good working order.

SOUTH CAMBRIAN.—C. Williams, April 22: I am pleased to report a considerable improvement in the lode in the adit level driving east for the past fortnight, which is now yielding 3½ tons of blende ore per fathom for the width carried in driving, and the present appearance indicates a further improvement. The lode in stripping down below the shaft sunk on surface is still composed of a very fine lode matrix, with a strong mixture of blende ore throughout the width cut into—12 ft.

SOUTH DARREN.—Henry James, April 24: Bishop's shaft is going down in the country rock, the south side of the lode only at times breaking into it to prove its character; depth is being attained speedily. The driving of the 100 east and west from the 90 winze is being pushed on vigorously; the lode in the eastern end is worth 16*l*. per fathom, and in the western end 36*l*. per fathom—a strong lode. In the 90 end the lode is worth 36*l*. per fathom, and improving, especially in the sole of the level; this end being a considerable distance in advance of the driving below, and all in good stoping ground, speaks well for the 100. The three stopes in the back of the 90 are worth on an average 19*l*. per fathom. No. 1 stope in the back of the 80 is worth 26*l*. per fathom, and No. 2 stope 7*l*. per fathom. Next week I intend to commence sinking a new winze in the 80, a little in advance of the 90 forebreast. The tribute pitches are producing fair average orestuff. Our water supply is still short by night, consequently drawing and dressing are very much impeded. We shall sample 45 tons of silver-lead ore on Saturday, for sale next week.

SOUTH DE ERESBY MOUNTAIN.—Wm. Bennetts, Thos. Bennetts April 23: The ground in the cross-cut at No. 1 adit continues favourable for driving, and is of a most promising character. The end driving on No. 1 lode at No. 2 adit is looking well. The men have completed casing of the engine-shaft to water level.

SOUTH MOLTON CONSOLS.—T. May, April 24: No particular change in our adit cross-cut since last report. The ground still continues of a blue stiff killas.

TANKERVILLE.—Arthur Waters, April 24: Watson's engine-shaft is deep enough for a 220 fm. level, and we shall begin to cross-cut towards the great lode forthwith. The 206 east is driven 30¼ fms.; lode in present end 5 ft. wide, worth 1¼ ton of lead ore per fathom. We are near a cavity here. The 206 west is driven 19 fms.; lode in present end 3½ ft. wide, worth ¾ ton per fathom. The seven stopes in the back of the said level, east and west of shaft cross-cut, are worth together about 11 tons per fathom. The stope in the back of the 192 west is worth about 2 tons per fathom. The lode in the 180, east of shaft, is worth about 2 tons per fathom. Other points and tribute pitches without change to notice since last reported on.

TEESDALE.—April 17: Nothing very important to report from the west end forehead; the quantity of lead ore is fully as good as it has ever been, and the mineral appearances are even more promising than I have ever seen. I am nearly certain our stoping will be 50 per cent. richer immediately above the roof of the forehead. The west end stope still continues as good as we have ever had it, and what is still more satisfactory is the gradually setting upward tendency; we have not found the top of the ore in the face of the working. I could place other four men working at lead ore only we are too much in advance of the dressing. I hope to be a little relieved in another month. Dressing has only made slow progress since my last report, chiefly owing to the weather. On Saturday and Monday it was too severe to get much done. We have 18 bings ready dressed, which they would commence leading on Friday, April 18.

TEMPLE.—April 23: We are now able to make good progress at surface; the weather, although very cold and wet, has been more favourable, and the floors are now in a forward state and will soon be completed. The carpenters and smiths are engaged in collecting and arranging the various apparatus that is to be worked by the small water-wheel. The crusher that is to be worked by the larger wheel has been completed some time. It is expected, unless any unforeseen circumstance should prevent, that the whole of the dressing machinery will be ready for work early next month, when we shall immediately commence to dress the ore that is raised, and begin to stope away the reserves of ore underground. The masons are now engaged in making the second slide and picking table to receive the ore as it is brought to surface previously to its going to the crusher. Four men are engaged cutting ground for the new wheel-pit. Underground every exertion is being used to push on the works as rapidly as possible. During the dast week the lode has not been taken down in either No. 1 or No. 2 level, but in No. 3 there is a decided improvement in the appearance of the lode. Although it is not productive of lead the quantity of blende and spar is considerably increasing, and the general character of the lode indicates that ore will be met with again shortly. The winze sinking below No. 2 will be sunk by the side of the lode, so we cannot give the value or produce of the lode between the levels till the winze is completed and the lode stripped down.

UNITED IVAN CONSOLS AND GLYN LEAD AND BARYTES.—James Roach, April 24: All preliminary work about and at bottom of Murray's shaft has been completed, plat sollard, laid, &c. To-day we commenced driving the 50 west on north part of lode, and have broken excellent stones of lead therefrom. We shall push this on to communicate with the winze sunk under the 40 with all dispatch. In my next report I will describe the general character and value of the lode for ore. We are making preparations to draw from Gundry's shaft with Murray's engine, which will soon be completed; we shall then drive the 40 east without delay, when we expect soon to meet the lead dipping from the eastern ground. The deep adit level has been cleared and permanently secured with timber as far east as the cross course, on which we found a level had been driven north about 45 fms. We are now extending this level towards the north or Van lode, which we anticipate intersecting in from three to four months from this date. I may here add, the cross course is fully 4 ft. wide, and consists of decomposed clay slate, quartz, lime spar, and small quantities of oxide of iron, a little sulphur, &c. We let 30 fms. to drive at 75s. per fathom. We fully expect to meet with a course of lead when we reach the junction; all indications highly favour it. The 50, west of Glyn shaft, is still driving on north wall of lode; recently the ground has become considerably harder, therefore very congenial to the production of lead. We shall soon be in a position to cross-cut the lode in this promising stratification. All work is done by contract, as also the erection of the new pit-head, &c. In all cases I am advised and assisted by Mr. Thomas, our local director. I think the present management will soon bring these united mines into wide-spread repute.

VAUGHAN.—April 23: In the 30, west of stope, nothing has been done since last reported on, owing to the level being full of stuff from the stope. In the stope over this level the lode is 10 ft. wide, and hard for exploring, yielding 18 cwts. of lead ore per fathom. The machinery is in good working order, and dressing progressing as rapidly as the present supply of water will admit, but it has rather fallen off this week, but we shall be in a position to sample 20 tons of silver lead ore on Tuesday next, the 29th inst.

WEST ASSHETON.—J. Garland, April 19: The 40, west of boundary shaft, is being driven by the side of the lode, and fair progress is being made; the lode has not been taken down since last reported on. The stope in the back of this level has fallen off in value, and is now yielding 1 ton per fathom; we expect an improvement shortly. In the 50 the lode having taken a more southerly course the men are employed in stripping down the lode, which for the 9 ft. stripped is valued at 1 ton per fathom. The pitch in the back of the 50 is yielding about 1 ton of lead ore and ¼ ton of blende per fathom. The 60 is in comparatively hard rock at present; the lode yields good stones of ore.

WEST PATELEY BRIDGE.—D. Williams, April 24: Craven Cross shaft has attained a depth of 12½ fms. below the 56, or 68½ fms. below the surface, the shaftmen having completed their contract of 25 yards sinking in 11 weeks. We are now easing, dividing, and putting in a ladderway to the bottom, and hope to be able to resume driving two levels at the 67 north west and south-east upon the vein in the latter end of next week, leaving 9 ft. of loom for storing water in the bottom of the shaft. In the 56, west of shaft, the east and west branch has made a sudden bend northwards, and intersected this vein, which is now 3 ft. wide, consisting principally of gossan, calcspar, and intermixed with good branches of galena, and worth 10 cwts. per fathom. The cross cut north-east to the parallel veins has been extended 10 fms. 3 ft., and the south-west cross-cut 10 fms. 5 ft. I hope to commence erecting the air compressor and connections to work Cranston's rock drill next week, and have same in full operation driving these cross-cuts in three or four weeks. In the drivage east upon the vein from the bottom of the winze below the 56 (at a point 48 fms. east of shaft), the vein is 3 ft. wide, and producing saving work for dressing. A stope in the back of this level west of winze is worth 10 cwts. lead ore per fm.—No. 2 Shaft: The metal pitch in the back of the 28 east is producing 12 cwts. of lead ore per fathom. In the cross-cut south to the parallel veins from the 23 west, the vein upon which we are driving is 4 ft. wide, and producing rich stones of galena, being good saving work for dressing. On surface the new ore-house is in a forward state. We have carted 50 bings of clean ore to the smelt mill.

WEST WHEAL TOLGUS.—April 24: The lode in the 155, west of Taylor's shaft, is still 5 ft. wide, and worth 1 ton of copper ore per fathom, but the ground is harder and more spare for driving. The lode in the 145, east of No. 1 cross-cut, is 4 ft. wide, and producing a little saving work for copper ore. The lode in the 145, west of shaft, is 3 ft. wide, and yielding 1 ton of ore per fathom. The lode in No. 1 winze in the bottom of this level is 4 ft. wide yielding 3 tons of ore per fathom. The lode in the No. 2 winze in the bottom of this level, and about 15 fms. west of No. 1 winze, is 5 ft. wide, and yielding 2 tons of ore per fathom. The lode in the 135, west of shaft, is 2 ft. wide, and producing some very good stones of ore. The lode in the No. 7 winze in the bottom of the 125, west of shaft, is 1½ ft. wide, and yielding ¼ ton of ore per fathom. The stopes in this part of the mine are looking quite as well as for some weeks past.—Richards's Shaft: The lode in the 95, west of shaft, is 4 ft. wide, and yielding good stones of ore, but not sufficient to value. The lode in the 65, west of shaft, is 4 ft. wide, composed of spar and white iron, and spots of copper ore.

WEST WYE VALLEY.—John Kitto, April 19: We have resumed the sinking of Brookes' shaft below the 52, and are now making very fair progress; the lode in the shaft looks kindly, and is yielding some very good stones of lead ore. In fact the appearances of the lode have much improved since the sinking was resumed, and I think we shall soon see it much more productive. There has been no change of importance in either the 40 or 52 fm. levels since the date of my last report, but good progress has been made in driving the latter, and the lode looks very likely to improve in value. The stopes in the 40 and 14 are not yielding so well as formerly, and the severe weather which we have had during the past month has greatly interfered with our drawing and dressing operations, but everything is now in full work.

WHEAL CREBOR.—John Andrews, April 22: Setting Report: To drive the

120 east, by six men, at 7*l.* 10s. per fathom; at this point we are carrying about 2 ft. of the north part of the lode, which is unproductive. To stope the back of the 120, by six men, at 3*l.* 5s. per fathom; lode 4 ft. wide, worth 8*l.* per fathom. To drive the 108 east, by four men, at 8*l.* per fathom; lode 5 ft. wide, worth 12*l.* per fathom. To sink a winze in the bottom of the 108, by four men, at 7*l.* per fathom; lode 6 ft. wide, worth 10*l.* per fathom. To rise against the new shaft in the back of the 48, by six men, at 6*l.* 10s. per fathom; here we are rising by the side of the lode, so as to effect a communication with the new shaft as soon as possible. To sink the new shaft below surface, by six men, at 15*l.* per fathom; lode 2 ft. wide, but is poor.

WHEAL GRENVILLE.—T. Hodge, J. Hosking, April 22: The following is our setting report of this mine for the ensuing four weeks:—To sink Goold's shaft below the 155, by six men, at 30*l.* per fathom. We trust to have lodes in junction here shortly. To drive the 165 east, by six men, at 11*l.* per fathom; the lode is worth 7*l.* per fathom. To drive the 165 west, by four men, at 10*l.* per fathom; the lode is producing stamping work. The 150 east end is being driven by the boring machine, which is working very well. As soon as the men get used to this mode of working we think they will make rapid progress; the lode is worth 10*l.* per fathom—a very kindly appearance. The 140 east, to four men, at 8*l.* 10s. per fm.; the lode is worth for tin 7*l.* per fathom. To drive a cross-cut north through the lode at the 150, which is producing good work, to two men, at 10*l.* per fathom. To stope above the 150 east, by twelve men, at 3*l.* 10s. per fathom, which is worth 10*l.* per fathom. To sink a winze below the 150 east, by six men, at 9*l.* 10s. per fathom; the lode is worth 10*l.* per fathom. We have set 13 pitches, to 35 men, at an average tribute of 11s. 8d. in 1*l.*, to be paid at the rate of 37*l.* per ton for black tin.

WHEAL RUSSELL.—John Bray, April 24: The lode in the rise above the 25 is 2 ft. wide, of a very promising character, thickly spotted with black and yellow copper ore, letting out water freely. I still believe we shall soon reach a good lode. The lode in the 25 end is poor, but will soon improve.

WHEAL UNY.—William Rich, Matthew Rogers, April 19: We have set the men to rise in the back of the 172, west of Hind's, to communicate with the old engine-shaft. The lode in the 160 end east yields a little tin. The lode in the 160 west is worth 9*l.* per fathom. The 150 west is unproductive. The 130 end east is worth 6*l.* per fathom. The 130 end west is worth 8*l.* per fathom.

WYE VALLEY.—John Kitto, April 19: There has been no change in the 46 since the date of my last monthly report, but fair progress has been made in driving the same, and we are now within 12 to 15 fms. of the run of ore ground. The intermediate level between the 22 and the 46 has not been driven during the past month, as the lode was getting very wet, and we are afraid of letting down the water. The stopes in the roof of this level are looking pretty well, and are yielding very good ore. The 22 east has not improved of late, and I purpose cross-cutting the lode near the end in order to prove its size and character, as it quite possible that our level may not be on the most productive part. The tribute pitches are looking fairly well, and are yielding about an average quantity of ore. We have delivered the parcel of ore sold to Mr. Burr on the 26th ult., and shall sample another 43 tons in a few days.


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# The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, APRIL 25, 1879.

| IRON. | £ | s. | d. | £ | s. | d |
|---|---|---|---|---|---|---|
| Pig, GMB, f.o.b., Clyde.. | 2 | 3 | 3- | — | | |
| ,, Scotch, all No. 1 ... | 2 | 4 | 0- | 3 | 5 | 0 |
| Bars, Welsh, f.o.b. Wales | 4 | 15 | 0- | 5 | 0 | 0 |
| ,, ,, in London. | 5 | 2 | 6- | 5 | 5 | 0 |
| ,, Stafford., ,, . | 6 | 5 | 0- | 7 | 0 | 0 |
| ,, in Tyne or Tees ... | 5 | 5 | 0- | 5 | 10 | 0 |
| ,, Swedish, London .. | 8 | 10 | 0- | 8 | 15 | 0 |
| Rails, Welsh, at works.. | 4 | 15 | 0- | — | | |
| Sheets, Staff., in London | 7 | 10 | 0- | 7 | 15 | 0 |
| Plates, ship., in London | 5 | 12 | 6- | — | | |
| Hoops, Staff. ..... | 6 | 15 | 0- | 7 | 2 | 6 |
| Nail rods, Staff. in Lon. | 5 | 15 | 0- | 6 | 5 | 0 |
| STEEL. | | | | | | |
| English, spring .....13 | 10 | 0 | -19 | 0 | 0 | |
| ,, cast .....30 | 0 | 0 | -40 | 0 | 0 | |
| Swedish, keg.... .....14 | 0 | 0 | - | — | | |
| ,, fag. ham. .....15 | 0 | 0 | - | — | | |
| LEAD. | | | | | | |
| English, pig, common ..14 | 0 | 0 | - | — | | |
| ,, ,, L.B. .....14 | 5 | 0 | - | — | | |
| ,, ,, W.B. .....15 | 0 | 0 | - | — | | |
| ,, sheet and bar..15 | 0 | 0 | - | — | | |
| ,, pipe .....16 | 0 | 0 | - | — | | |
| ,, red .....17 | 10 | 0 | - | — | | |
| ,, white .....25 | 0 | 0 | - | — | | |
| ,, patent shot ...18 | 10 | 0 | - | — | | |
| Spanish .....13 | 15 | 0 | - | — | | |
| NICKEL. | | | | | | |
| Metal, per cwt. .....18 | 0 | 0 | -20 | 0 | 0 | |
| Ore, 10 per cent. per ton.24 | 0 | 0 | -26 | 0 | 0 | |
| QUICKSILVER. | | | | | | |
| Flasks of 75 lbs., ware.. | 6 | 2 | 6- | — | | |
| SPELTER. | | | | | | |
| Silesian..... .. | 15 | 0 | 0- | — | | |
| English, Swansea ..... | 16 | 0 | 0- | — | | |
| Sheet zinc ..... | 19 | 10 | 0- | 20 | 0 | 0 |

| TIN. | £ | s. | d. | £ | s. | d |
|---|---|---|---|---|---|---|
| English, ingot, f.o.b... | 69 | 0 | 0- | — | | |
| ,, bars ,, ... | 70 | 0 | 0- | — | | |
| ,, refined..... | 71 | 0 | 0- | — | | |
| Australian ..... | 68 | 10 | 0- | 68 | 15 | 0 |
| Banca ..... (nom.) | 72 | 0 | 0- | — | | |
| Straits ..... | 68 | 10 | 0- | 68 | 15 | 0 |
| COPPER. | | | | | | |
| Tough cake and ingot. | 62 | 0 | 0- | — | | |
| Best selected ..... | 62 | 10 | 0- | — | | |
| Sheets and sheathing . | 66 | 0 | 0- | 67 | 0 | 0 |
| Flat Bottoms ..... | 70 | 0 | 0- | — | | |
| Wallaroo ..... | 63 | 0 | 0- | — | | |
| Burra, or P.C.O. ..... | 62 | 10 | 0- | — | | |
| Other brands ..... | 61 | 0 | 0- | 62 | 0 | 0 |
| Chili bars, g.o.b..... | 56 | 10 | 0- | 56 | 15 | 0 |
| PHOSPHOR BRONZE. | | | | | | |
| Bearing metal ..... | £105 | 0 | 0 | | | |
| Other alloys ..... | £110 | 0 | 0- | 125 | 0 | 0 |
| BRASS. | | | | | | |
| Wire ..... | 7 | d.- | | 7½d. | | |
| Tubes..... | 7¼ | - | | 7½ | | |
| Sheets ..... | 8 | - | | 8¼ | | |
| Yel. met. sheath. & sheets. | 5½ | - | | 5¾ | | |
| Nails composition..... | 7¼ | - | | — | | |

| TIN-PLATES.* | per box. | | | | | |
|---|---|---|---|---|---|---|
| Charcoal, 1st quality ... | 1 | 1 | 6- | 1 | 2 | 0 |
| ,, 2nd quality... | 1 | 0 | 0- | 1 | 1 | 0 |
| Coke, 1st quality ..... | 0 | 17 | 6- | 0 | 18 | 6 |
| ,, 2nd quality ..... | 0 | 16 | 0- | 0 | 17 | 0 |
| Black .....per ton | 16 | 0 | 0- | 16 | 10 | 0 |
| Canada, Staff. or Gla., at Liverpool ..... | 11 | 0 | 0- | 12 | 0 | 0 |
| Black Taggers, 450 of 14 × 10 ..... | 30 | 0 | 0- | — | | |

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; 1X 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—The general aspect of the markets is without change, and sellers of most metals make but slight alterations in their quotations. Business still continues very limited, and fresh orders come to hand slowly, and have to be executed at extremely low prices. The inaction of speculators would, indeed, be quite surprising, were it not that the critical state of affairs have so completely undermined their confidence. However, when money is excessively cheap and prices exceeding low, there is a fair chance for speculators effecting a rise, as these features are generally found to be infallible auxiliaries in stimulating a consumptive demand, and, therefore, the absence of speculation is almost unaccountable, and is certainly a most exceptional occurrence. The hoarding of wealth exercises a baneful influence on commerce, and until money is once again more generally distributed throughout commercial and manufacturing circles there cannot be much hope for any considerable amendment. Capitalists in a short time will probably be dissatisfied in obtaining only 1 per cent. for their money, and they will undoubtedly be seeking more remunerative investments, and as soon as the financial community begins to step beyond their present contracted sphere some revival in trade may be looked for. Money is of little value to anyone unless it is freely used, and the last and most profitable medium that has hitherto been discovered has unquestionably been commercial enterprise. Although the official rate of discount continues at 2 per cent. there is but little discount business above 1 per cent. At present there does not appear any prospect of the vast accumulations decreasing, but rather the reverse, for the tendency appears to be on the increase, for according to a recent telegram from Australia a larger shipment of bullion than has been known to be exported from the Antipodes for the last two years has just been shipped to England from that country. These accounts, which are continually being published as regards the state of our money market, will surely soon make some favourable impression upon trade, as easy facilities of finance ought rather to encourage than deter operators from coming into our markets.

COPPER.—The principal event of the week has been the Australian sales of Wallaroo and Burra last Tuesday, the result of which has been very unsatisfactory to those companies, and has since caused a most gloomy tone to prevail over the whole of the trade, and prices of most descriptions are consequently lower. The Wallaroo sale, as usual, came off first, and opened with buyers paying 62*l.* 17s. 6d., but this figure was not long maintained, and 62*l.* 2s. 6d. was accepted, when the selling brokers were handed a telegram fixing the minimum at 62*l.* 10s., and a few more lots were sold at this price, through there was over 400 tons not disposed of, but it is reported that this quantity has since been sold at 62*l.* 10s. The 650 tons of cake was sold at an average of 63*l.* 10s. 6½d., and the nine tons of ingots at 63*l.* 2s. 6d per ton. The Burra sale came off immediately afterwards, but the low prices which the Wallaroo fetched was not calculated to induce operators to come forward over freely, and consequently exceptionally low rates had to be accepted. At the same time a certain portion was sold at 5s. to 10s. per ton above the prices accepted for some of the Wallaroo lots; 152 tons cake were disposed of at an average of 61*l.* 19s. 10d., and 66 tons ingot at 61*l.* 19s. 9d. per ton. These low prices have not only ruled for Australian copper, but Chili bars have also become less valuable, and have been sold as low as 56*l.* 5s. Tempting inducements are, therefore, offered for speculators, for the Chilian war is still progressing, and should it be continued much longer a serious check must be made to the supply of this particular description of copper, and enhanced rates will undoubtedly follow.

IRON.—The iron trade shows no particular alteration either as regards price or demand, some makers are rather firmer in their quotations than others. Nevertheless, owing to the marked scarcity of orders at the present time it is not difficult to induce most sellers to make contracts at easy rates. The various reports which come to hand this week are of a most unsatisfactory character, and all tend to show the great depression that exists throughout all the producing districts. It is reported from Birmingham that the loss of one firm alone for the last year's production is nearly 13,000*l.*, and there are many firms who are now producing at heavy losses per week. Trade continues very dull at Sheffield, though there is no particular change to be reported in the general aspect of the market. It is stated that the keen competition which America causes is very much felt in this district, and many orders which formerly came regularly to the makers in this producing part of the country are now executed by American producers, and more particularly so in the hardware department. The Indian and African markets continue dull, and home requirements are limited. The war at the Cape is also said to be injuring the trade to some extent in this district, nevertheless sellers continue to quote at last week's figures. The returns from South Wales remain unsatisfactory, but a slight improvement took place in last week's clearances. Very few enquiries come forward for railway iron, and makers are considering the advisability of still further reducing wages. Next to nothing is doing in bars, and prices show no alteration. The statistics are most unfavourable, for from the three chief ports the clearances for last month are considerably below what they were in the corresponding month of last year, and it will be remembered by all that the year 1878 all through proved an exceptionally bad one. The clearances from Newport last month were 2546 tons, against 8536 tons in March, 1878, and those from Cardiff were 5764 tons, against 6794 tons, and from Swansea 169 tons, against 321 tons. There is very little business doing at Leeds, and the low prices now ruling do not in any way seem to encourage buyers to come into the markets. But a limited amount of business is reported to be doing on the Middlesborough market, and makers are taking advantage of the Durham strike, and give notice that they are unable to deliver promptly in consequence of same.

The strike in one way is doing an immense amount of good, for masters are considerably curtailing their production, and executing orders from their large stocks, and this will probably be the means of reducing the next statistics. Already sellers are demanding much higher rates for pig, No. 3 being quoted at 40s., and No. 4 forge at 37s. 6d. to 38s. per ton. New orders, however, flow in very slowly, as buyers show no disposition whatever to to pay in advance of previous quotations. Holders and producers show some little anxiety as to what would be the better course to pursue whilst the strike continues, and also as to the length of same; for there is much difficulty in obtaining both coal and coke at reasonable rates. Nevertheless, the general feeling appears to be to hold iron for a rise, which is evidently anticipated. However, no permanency in a rise can be relied upon unless other markets likewise advance their quotations. It is reported that about 20 furnaces in this district have already been blown out. Makers of manufactured iron are also rather stiffer in their prices, though there is no variation in the trade either for plates, bars, or angles. A fair business has been transacted on the warrant market at Glasgow during the past week, and at times buyers have shown a good deal of disposition to purchase, and prices have consequently become somewhat firmer. On Monday the market opened with buyers paying 43s. 3d. for cash parcels, and closed with sellers quoting at 43s. 6d. On Tuesday the price was raised to 43s. 10½d., when a slight relapse set in, and 43s. 9d. was accepted, but subsequently the demand became more active, and prices were soon raised to 44s., and our markets have now receded again to 43s. 6d. cash.

SHIPMENTS.

| | |
|---|---|
| For the week ending April 19, 1879 ..... Tons | 13,228 |
| For the week ending April 20, 1878 ..... | 9,513 |
| Increase ..... | 3,715 |
| Total increase for 1879 ..... | 32,773 |
| Imports of Middlesborough pig-iron into Grangemouth :— | |
| For the week ending April 20, 1878 ..... Tons | 5,888 |
| For the week ending April 19, 1879 ..... | 3,595 |
| Decrease ..... | 2,293 |
| Total decrease for 1879 ..... | 11,397 |

FURNACES.

| | |
|---|---|
| In blast April 19, 1879 ..... | 87 |
| In blast April 20, 1878 ..... | 91 |

TIN.—Quotations have shown a downward tendency all the week, and as low as 68*l.* has been accepted for foreign tin for arrival. Whether the principal operators have permitted prices to droop for any special reason of their own, or whether their inaction is occasioned by their possessing any anxiety as to the future course of the market, it is impossible to say, but judging from past experience it would almost appear that the former is most probably the reason, for of late often when prices have somewhat receded the chief operators have adroitly turned the market to their own advantage, and this having been the case on some previous occasions they may be enabled to repeat their former successes in a similar sort of manner. Stocks are certainly very large, but they are so well controlled that they affect prices in but a small degree, and the consequence is that spot tin is not offering very freely at existing rates. Buyers should, therefore, take into their own immediate consideration the question of providing themselves with sufficient stock to cover their contracts on hand. It is impossible to say that prices will not go any lower, but buyers should be careful not to be too dilatory, for a few of the chief operators having in great part the control of the market it is not to be expected that they will give purchasers the benefit of reduced prices longer than it serves their present purposes.

QUICKSILVER has been in unchanged good demand at 6*l.* 2s. 6d. The Californian projected combination remains yet in abeyance, and in the meantime China has been purchasing freely.

LEAD.—Sellers of pigs are decidedly weaker in their quotations, and the demand keeps extremely limited, but the imports are evidently above the requirements of the trade. Sheet lead is also rather easier in price, and some few sales have been effected at 15*l.* 5s. per ton.

SPELTER.—This market remains in a very unsatisfactory condition, and prices of English hard are rather weaker.

STEEL.—Both Swedish and German are reduced in value, the former being quoted at 13*l.* per ton, and the other at 9*l.* 10s. to 10*l.* per ton.

TIN-PLATES.—These are unaltered.

MESSRS. FRY, JAMES, and CO.—COPPER: Since our last the auction sales of Australian held on 22nd instant have had more than their usual depressing effect on the market, and all kinds have suffered in consequence. Of the quantities offered 650 tons (out of 1070 tons) Wallaroo cake sold at an average of 62*l.* 10s. 6d. per ton, and the remainder was withdrawn, whilst the 230 tons Burra Burra were sold at an average of 61*l.* 19s. 10d. per ton. There were 300 tons Cape ore sold yesterday at 11s. 1d. per unit, 30¼ per cent. produce.—IRON: This metal has experienced some revival in Scotch pig, but general merchant iron is without change.—TIN: This has shown great steadiness, on the whole; but has been a trifle easier to buy in the last day or two.—LEAD: This metal experiences continued heaviness.—SPELTER: This is inanimate, and without change in quotations.—TIN-PLATES: These are a shade easier to buy.

MESSRS. PIXLEY and ABELL.—GOLD: Small amounts have been taken for the Continent during the past week, but the bulk of the arrivals have been sent into the Bank, the amount so disposed of since our last being 137,000*l.*; on the other hand, 30,000*l.*, sovereigns, have been withdrawn for Malta.——The French exchanges are gradually declining, and will probably soon be at a point that will permit of gold being sent to Paris; a large amount, 241,000*l.*, is expected here from India and China on the 28th inst., so that there will be no need to have recourse to the Bank stock. The Mirzapore has brought 62,930*l.* from India, the Bessel 4400*l.* from the Brazils, and the Valparaiso 30,800*l.* from Lisbon. The Para has taken 14,110*l.* to the West Indies.——SILVER: The market has again slightly improved, and, after remaining for a few days at 49⅝d, went to 49¾d., and then to 49 13-16d., at which rates the supply by the Pacific steamer was placed yesterday. A small order to-day coming when the supplies had been nearly cleared off has had the effect of hardening the price somewhat, and we give 49⅞d. to 49 15-16d. as the nearest quotation. The arrivals since our last comprise 80,750*l.* from America, 35,990*l.* from the Pacific, and 12,000*l.* from Germany. The Peninsula and Oriental steamer leaving to-day takes 178,500*l.* to Bombay.——MEXICAN DOLLARS: At the close of last week the price remained steady at 48⅛d. per oz., and at this rate the dollars that were for sale by the French steamer were placed; the market has subsequently improved, and the arrivals to hand to day have realised 48¾d. per oz. We have received since our last 50,000*l.* by the French steamer, and about 9000*l.* from New York.

The MINING SHARE MARKET has not been particularly active this week, nor has there been much variation in prices, which are in many instances merely nominal, and in others lower. The mines mostly dealt in have been South Frances, West Frances, Herodsfoot, Parys Corporation, South Condurrow, Roman Gravels, Wheal Grenville, Leadhills, and a few others.

TIN.—Although it is said the smelters are giving 2s. per cwt. beyond the standard price, no official advance has yet taken place, and although some good dividends have been paid during the week shares have not advanced generally. South Frances, 10 to 10¼, ex div.; at the meeting on Tuesday the accounts showed a profit on four months' working of 5437*l.*, and a credit balance of 6411*l.*, out of which a dividend of 12s 6d. per share was declared, leaving in hand 3602*l.* The tin sold realised 10,688*l.* The costs were charged up to the last pay in April, and merchants' bills to end of March. The agent stated that he had never before seen such a lode as they now have for a distance of 65 fms., and he thought the deeper they got the richer the lode would prove.

Carn Brea, 29 to 31; Dolcoath, 27 to 29. East Pool, 10¼ to 11, ex div.; at the meeting, held in Cornwall, the accounts showed a profit on three months' working of 1226*l.* 7s. 5d, and a balance in hand of 1395*l.*, out of which a dividend of 4s. per share was declared, leaving 115*l.* in hand. The copper ores realised 1334*l.* 14s. 11d; tin, 5332*l.* 8s. 10d.; tinstone, 545*l.* 8s. 2d.; arsenic, 700*l.*; making the total receipts 7939*l.* Cook's Kitchen, 2 to 2½; Tincroft, 10 to 10½; Penstruthal, 1s. 6d. to 2s. 6d.; South Condurrow, 11½ to 12; West Basset, 4½ to 5; West Frances, 5 to 5½; Wheal Agar, 3½ to 4; Wheal Basset, 1 to 1½; Wheal Grenville, 3¼ to 3¾; Wheal Peevor, 9 to 9½; Wheal Uny, 7s. 6d. to 12s. 6d.; West Peevor, 2½ to 3.

COPPER MINES are quiet, and very little business doing. Devon Great Consols, 2 to 2½; Bedford United, ⅛ to ⅜; Gawton, ⅜ to ½; Wheal Crebor, 4s. to 6s.; Mellanear, 3½ to 3¾; the accounts for the six months ending Dec. 31 show a profit of 1936*l.* 13s. 7d., and a balance to credit of profit and loss of 2222*l.* 16s. 10d.; out of this a dividend of 3s. per share was declared in February last, absorbing 1500*l.*; a further sum of 200*l.* was written off preliminary expenses, and 190*l.* carried to reserve fund, which now amounts to 540*l.* The return of copper for the six months were 2969 tons, or 224 tons more than in the preceding half-year, and the average price per ton was 3*l.* 0s. 4d., or 6s. per ton less than the average of the half-year ending June. The entire profit for the year 1878 was 3962*l.* 17s. 3d., and the reserves in the mine are computed at 14,700 tons of ore. Parys Corporation, 10s. to 12s. 6d.; Morfa Du, 17s. 6d. to 20s.; West Tolgus, 25 to 27; Hingston Down, ¼ to ⅜.

South Wheal Crofty meeting will be held next Friday. The statement of account shows as follows:—Five months' labour cost, to April 5, 581*l.*; merchants' bills and rent, 597*l.*: total cost, 1178*l.* Credits: 88 tons copper produced 258*l.*; tin, tinstuff, and arsenic, 182*l.*; making total credits, less dues 7*l.*, 434*l.*, and showing a loss of 744*l.* The balance against the mine is 6728*l.*

LEAD MINES have been rather weaker, owing to the decline in the lead market. Vans are 19 to 20; Great Laxey, 15 to 16; Roman Gravels, 8⅜ to 9½; Tankerville, 3½ to 3¾. Herodsfoot, 3 to 3½; the mine has sampled for the two months' working 55 tons of silver-lead ore. The best parcel, 38 tons, yields 26 ozs. of silver to the ton; the second, 17 tons, 24 ozs. The report states that the 205, or bottom end, has much improved, and worth 20 cwts. per fathom. At Pateley Bridge the new machinery will be at work in about a fortnight. Aberllyn, 10 to 12; Bettws-y-Coed, 20s. to 25s.; Clementina, 1 to 1¼; D'Eresby Mountain, 30 to 40; East Van, 1½ to 2; Glenroy, 7s. 6d. to 12s. 6d.; Leadhills, 2 to 2½; West Chiverton, 2½ to 3; Bodidris, 1⅝ to 1⅞; West Pateley, 2 to 2½; Minera, 9½ to 10½. Caron, 1⅞ to 2½; this mine sells 30 tons of lead this week. Frongoch, 2 to 2½; this mine samples 120 tons, for sale next week. Grogwinion, 2½ to 3; Hartington, 2½ to 3. Red Rock, 1⅞ to 2½; the sale of 40 tons on the 23rd, at 8*l.* 13s., was an advance of 15s. 6d. on previous sale. St. Harmon, 1⅛ to 2½; South Cwmystwith, 1½ to 2½; West Wye Valley, 1¼ to 1¾; Wye Valley, 1¼ to 1⅜; Gwernymynydd, 4 to 4½.

FOREIGN MINES.—Blue Tent. 2¼ to 2½; Arendal, 3½ to 4½; Cape Copper, 28 to 29; Chontales, ⅛ to ⅜; Colorado, 2 to 2½; Don Pedro del Rey, 14s. to 16s. Santa Barbara, 2¼ to 2½; the accounts for the meeting show a profit on the mine of 4968*l.* 16s. 3d., which by interest, &c., is brought up to 5149*l.* 16s. 3d., and the credit balance for the year 5662*l.* 8s. 5d., out of which a dividend of 1s. per share —2000*l.*—was paid on Dec. 17, and the directors now propose another of 1s. 6d.—3000*l.*—payable in May. This will make 25 per cent. for the year 1878, add 500*l.* to the reserve fund, and carry forward 162*l.* 8s. 5d. The gross proceeds of gold for the year realised 20,063*l.* 16s. 7d., and in the early part of the year the profit commenced at less than 500*l.* per month. The operations for the present year commenced at over 1000*l.* per month profit. The profit for February is 814*l.* 13s. 8d. Frontino and Bolivia, 2⅜ to 2⅝; Hultafall, 2 to 2¼; Placerville, 2⅛ to 2¼; New Quebrada, 1⅜ to 2⅛; Panulcillo, 25s. to 27s. 6d.; Richmond, 8½ to 8¾; Last Chance, ⅜ to ½; Canada Gold, 2 to 2⅜.

The Market for Mine Shares on the Stock Exchange has well maintained the increased activity reported as observable at the close of last week, and although in some cases transactions have taken place at lower prices, the decline is of small amount, and the change of quotation is chiefly due to the prices being less nominal than they have been. Even now sellers cannot always deal at the quotations given, but it is easier to find buyers within a reasonable margin. Several dividends have been declared during the week, including 4s. per share by the General Mining Association, 4s. per share by East Pool, and 12s. 6d. per share by South Wheal Francis. Amongst the new enterprises before or about to be brought before the public may be noticed one, which regards the money unfruitfully expended by the former workers as cash outlay which should be included in or added to the purchase money, and another which. the difficulty recently experienced in catching shareholders being fully appreciated, has secured the co-operation of a fishing tackle dealer.

Referring to the Old Telegraph Mine, Mr. W. Bredemeyer, of Salt Lake City, writes that his defence of the mine as a very valuable property must not lead the public to suppose that it is worth $3,400,000, which it certainly is not; he considers that at anything above $1,000,000 it would be a risk to the buyers.

The Tribunal Correctionnel de la Seine, in the case of David against the Société Générale pour favoriser le Développement du Commerce et de l'Industrie en France has decided that—"Considering that David has cited before the Correctionnel Tribunal for the hearing of April 19, Messrs. Denière, de Gonet, Moléon, E. Blount, Broleman, Denton du Pin, Frère, Gros aîné, Alfred Leroux, L'Huillier, de Maintenant, Talabot, Bailleux de Marisy, baron de Sandrans, Huard—as being guilty of different offences indicated in the citation. Considering that it appears that among the persons cited are found Messrs. de Gonet, honorary counsellor at the Court of Paris, and A. Leroux, grand officer of the Legion of Honour. Considering that by the terms of articles 479, 481, 482 of the Criminal Code, and of Art. 10 of the law of April 10, 1810, the Tribunal cannot pronounce judgment on the offences committed by the above-named persons even outside of their functions. Consequently, considering that the incompetent jurisdiction with regard to these two persons, it is equally so with regard to the co-defendants (co-inculpés); for these reasons the Tribunal declares nul and void the citation delivered by David against the above-named, and condemns David in the costs. This leaves the real question at issue in as unsatisfactory state as ever.

The Compagnie des Mines d'Or et Canaux d'Amador Volcano (Amador Volcano Gold Mining and Water Company) of California are offering on the French market 5200 shares (the total capital is 10,000 shares of 500 fr. each) at 600 fr., or 20 per cent. premium. Referring to the issue, the Crédit National says that it is not upon the recommendation of the Mining Bureau of London and San Francisco that they believe the affair acceptable with the eyes shut, for this bureau has long been to all intents and purposes defunct. They do not even learn that it now announces itself as patron of a mine in California, for that would suffice to bring down thunderbolts upon the house if San Francisco were written to upon this subject—they recommend it because in spite of that patronage they hear nothing against it. The prospectus states that the property of the company consists of 600 acres of auriferous land, containing about 20,000,000 cubic metres of virgin deposits of native gold, the average value of which is estimated at 5 fr. per cubic metre (about 3s. 6d. per cubic yard); three large auriferous quartz veins, containing gold in the gangue, one of which is a kilometre (5 furlongs) long, 3 metres (10 ft.) thick, and a network of ditches 220 kilometres long, 20 kilometres of flumes, 14 reservoirs, 4 kilometres of iron conduit pipes, and an aqueduct of more than 33 kilometres. The canals, it is said, cost 3,000,000 fr. Mr. MacLaughlin, at present managing the affairs, reports that the total production of the property since 1875 has been, including the water sold, about 5,000,000 frs., and it is estimated that if there be plenty of water the production for the current year will be from 2,000,000 frs. to 2,500,000 frs. It appears that a dividend of 50 frs. per share was paid in Paris in January by Messrs. Munroe and Co., and the present plant is considered ample to wash 15,000 frs. worth of gold per day for about 270 days per year for 25 years. The amount of literary talent brought together on the direction is enormous. Mr. Turgan, the editor of Les Grandes Usines, is the chairman, and he has for colleagues Mr. Henri de Parville, the author of some interesting little scientific works, and Baron de Watteville, honorary director at the Ministry of Public Instruction, with Mr. Albert Rabou, retired naval officer, who can no doubt assist them in the shipment of any gold they may obtain. In connection with this enterprise a correspondent furnishes an exhaustive article in continuation of that published in last week's *Mining Journal*, and which will be found in another column.

Canada Gold, 2 to 2½; Mr. A. R. C. Selwyn, in speaking of this property, after reviewing the district, expresses his opinion that if the experience already gained by previous working be as intelligently applied as it has been in Australia, there is no reason why equally satisfactory results should not be achieved.

St. John del Rey, 270 to 280; the latest telegram from the mines at Morro Velho, dated Rio Janeiro, April 21, states that the produce for the first division (11 days) of April was 13,250 oits., of the value of 5134*l.*, the ley of the ore being 6·2 oits. per ton. The profit for March was 8100*l.* Santa Barbara, 2¼ to 2½; during February 1107 tons of mineral and 58 tons refuse produced 4164 oits. of gold. The estimated profit for February was 814*l.* 13s. 8d. In the bottom of the shaft the lode was increasing in size, and wider than Mr. Hilcke had ever seen it in any part of the mine, it averaging from 14 to 15 ft. wide, which looks well for future operations here. The short month had told unfavourably on the output. The mine captain reports that the quantity of ore raised during the month amounted to 1385 tons, of which 278 tons were rejected as refuse stone, and 1107 tons treated at the stamps, 58 tons of refuse sand re-treated by the pulveriser producing 28 oits. of gold. Average quantity of ore raised per bores for the month, 31·4 tons, or per hole bored, 0·653 tons.

Richmond, 8½ to 9; the usual telegram from the mines at Eureka, Nevada, states that the week's run was $50,000 from 816 tons of ore. During the week the refinery produced $30,000. One day was lost through breakage of shaft. The fire by which half Eureka was burnt did not interfere with the Richmond works. Cities like Eureka being little more than a collection of large wooden huts, such casualties are soon remedied by re-construction. The absence of report last week was due to Mr. Rickard's illness; he fell from his buggy, and having caught cold in the wound, got erysipelas in the face, which Mr. Morrison writes "has succeeded in closing his eyes." The success, however, appears to have been only temporary, as, it is gratifying to find, Mr. Rickard has since been able to write his own report, and hoped to be out again in a few days. Operations at the mine have been carried on with the usual regularity. There is no particular change in the chambers: they are all about the same as when last reported on. The furnaces are doing very well, and all the machinery, both in the mine and at the smelting works, is in good working order.

In Hydraulic or Gold Washing Companies shares there has again been a very limited amount of business, and those interested in this class of security are naturally much dissatisfied with the degree of

Judge Keyser, the full text of which appears, from the observations given below, to have been now received in this country. There can be no doubt that the decision will temporarily affect all hydraulic concerns, but it is merely what has for some time been expected by those competent to judge. The opinion is very general that many of the gravel properties are sufficiently rich to leave a good profit if the mineral be treated by processes other than the hydraulic, and it is even asserted that by this means materials which now go to waste will be recovered, and the profits by that means increased. As to the value of this opinion, nothing can be said without a knowledge of the constituents of the gravel to be treated; it has hitherto been stated that the gold is disseminated with extreme regularity, and that the average contents is from $1 to $2 per cubic yard. Let engineers know what is required to be done and they will soon set about to discover the mode of doing it.

The generally unprofitable character of American gravel companies in the hands of European capitalists has already been pointed out, and the decision just given in the long-pending litigation which has been going on in California between the owners of gravel or hydraulic claims and the owners of other property adjacent is likely to cause many efforts on the part of unscrupulous Americans and their friends to dispose of the "gold and water" properties in the European money markets, more especially as the decision of Judge Keyser is so unquestionably correct in law and in equity that it is unlikely that any reversal of the decision could be obtained, even if it were appealed against. The system of hydraulic mining is considered injurious to the land and streams of every district in which it is carried on, and is, therefore, only possible in unsettled countries where there are no conflicting rights of other proprietors, but such wholesale destruction and injury of course could not be tolerated when a district has become settled. Judge Keyser's decision will diminish the taxable property of the State for the moment, but will prevent permanent dilapidation, which would diminish the taxable property tenfold. The plaintiff's property is 60 miles from the hydraulic and water companies' works, which all lie within a radius of seven miles, and only employ between 400 and 500 men in all. The water when used by the defendant's mines is clear, but in being used for hydraulic mining gains in solution about 5 per cent. of earthy matter, and carries that percentage with the current down the Bear river to the plaintiff's lands, covering them with sand, small stone, and slickens to such an extent that at least 40,000 acres of valuable and productive agricultural land in the Bear River valley are rendered unproductive and uninhabitable, and the water is rendered totally unfit for domestic or animal use, or for irrigation. The whole of the defendants (Little York, Cedar Creek, Birdseye Creek, Franklin, Polar Star, Elmore Hill, Chalk Mountain, Gold Run, Nicholls, Le Kamp, and many others) are "perpetually restrained and prohibited from fouling and corrupting the water of Bear River and its branches, tributories, streams, ravines, and gulches with tailings or debris from their said mines, or either of them; that the plaintiff herein recover his costs of this suit taxed at $—— against the foregoing-named defendants, except the Gold Run Ditch and Mining Company; that the defendant A. G. Turner having disclaimed the complaint of plaintiff as to him is hereby dismissed, but without cost to either party." This decision will no doubt lead to suits being commenced against gravel and hydraulic miners in all parts of the United States where such operations are carried on.

Lead Mine shares remain without material alteration; a fair amount of business has been transacted, but there is considerable difficulty in arranging prices; quotations are for the most part nominal. Gwernymynydd, 4 to 4¼; a further inspection of the plant purchased for the working of this mine at Treasure shaft is considered only more conclusively to prove its value. The engines and pitwork are of modern construction and of the best class, doing full credit to the Perran Foundry Company, by whom they were made. Arrangements have been made for the sinking of Treasure shaft by means of a portable engine (which was included in the purchase of the beforementioned plant), and a great saving will be thus effected both in time and money. It is added that the great discoveries known to exist in the flax measures here, and also in the main lode in the carboniferous limestone, will both be opened by these means at a saving of at least six months in time. Meanwhile the adit from Treasure shaft to Cathole engine-shaft is being cleared and driven at a very rapid rate, and in this level discoveries of ore are expected in the chert measures. The property is thought to be one of the finest pieces of unworked ground in the Denbighshire lead field.

Mineral Corporation of Great Britain, 10 to 11; there is nothing special to report with regard to either of the mines; operations are going on as usual. At Great D'Eresby the engine has arrived, and is now on the mine. No important change is anticipated until the rock-drills are at work.

Frongoch, 2 to 2½; the monthly report states that good progress continues to be made in all departments. The new shaft is now being rapidly pushed down below the 142. Arrangements are nearly finished for lowering the miners to and raising them from their work by mechanical means, which will effect a considerable saving of time, and prevent unnecessary fatigue to the men, as at present they have to traverse upwards of 300 fms. of ladder way in going to and from the bottom levels. The prospects of the mine continue to be excellent. The winze sinking below the bottom level is still in rich ore. The 142 continues to be driven in good ore ground, and a cross-cut that has been put into the north side of the lode at this point has already been driven for upwards of 18 feet in rich ore ground, and still yielding well. The 90 east is in a good lode of lead, and has improved during the past month. The cross cut at the 56, towards the south lode, is progressing well. All surface operations going on satisfactorily. The alterations to the reservoirs are being pushed on, and the whole of the machinery, which has been thoroughly overhauled, and adapted for working by water power in place of steam, is giving full satisfaction. The men getting ore on tribute are doing well. A large quantity of lead has now been raised and dressed, and a parcel of 120 tons is to be sampled and sold forthwith.

Grogwinion, 2½ to 3; the report is of a satisfactory character, and the deep levels continue to open out rich, the lode in the deep adit being now valued at fully 2 tons per fathom. Caron, 1¾ to 2¼; a parcel of 30 tons of ore was sold yesterday, and another parcel will be got ready quickly. The mine continues to open out well; the winze sinking below the 10 has greatly improved, and is now worth fully 30 cwts. of lead ore per fathom. The shaft is now sunk to the 22, and the lode will be cut in a few days, when, judging from its strength and value in the winze above referred to, rich discoveries are expected. Wye Valley, 1¼ to 1¾. Good progress is making here; another 40 tons of lead will be sampled in a few days. West Wye Valley, 1¼ to 1¾; Brooke's shaft is being rapidly sunk, the lode yielding good lead in the sinking, and appearances have very much improved since it was resumed, the manager expecting to soon see it much more productive.

South Cwmystwith, 1¼ to 2½; arrangements for the reorganisation of this concern are progressing. St. Harmon, 1½ to 2¼. Red Rock, 1¾ to 2¼; a parcel of 40 tons of lead ore was sold on Tuesday at 8l. 13s. per ton, which is an advance of 15s. 6d. upon the previous sale. Good progress is making at the mine, and the various stopes are yielding well. Mawston, 1¼ to 2; 20 tons of lead have been sold, which leave a very good profit. The mine is looking exceptionally well. Hartington Moor, 1½ to 2; good progress making, and prospects improved. Crosswood, 1¾ to 2.

Cwm Brwyno, 2 to 2¼; it is reported that about 30 tons of lead are now ready for market. Rhydalun, 10 to 11; this mine is said to be now coming into notoriety, and great importance is attached to the discoveries already made, and the large profits that are anticipated.

Subjoined are the closing quotations:—

Assheton, ½ to ¾; Carn Brea, 29 to 31½; Devon Consols, 2 to 2¼; Dolcoath, 27 to 29; East Caradon, ¼ to ⅜; East Van, 1½ to 1¾; Gwernymynydd, 4 to 4¼; Great Laxey, 15½ to 16½; Hingston Down, ½ to ¾; Leadhills, 2 to 2½; Marke Valley, 12s. 6d. to 15s.; Penstruthal, 1s. 6d. to 2s. 6d.; Roman Gravels, 8¾ to 9¼; Tankerville, 3¼ to 3½; Tincroft, 10 to 11; Van, 19 20; West Assheton, 1½ to 1¾; West Basset, 4¼ to 5; West Chiverton, 2½ to 3; Wheal Grenville, 3½ to 4; Almada and Tirito, ½ to ¾; Birdseye Creek, ¾ to ¾; Blue Tent, 1¾ to 2¼; Canada Gold, 2 to 2½; Cape Copper, 28 to 29; Chontales, ¾ to ⅞; Colorado United, 2 to 2¼; Don Pedro, 11-16ths to 13 16ths; Nouveau Monde, 9-16ths to 11-16ths; Eberhardt and Aurora, 4¼ to 4½; Frontino and Bolivia, 2¼ to 2¾; Hultafall, 2 to 2¼; Javali, 4s. to 6s.; Kapanga, ⅜ to ½; Last Chance, ¾ to ⅞; New Quebrada, 1⅞ to 2⅛; Oregon Preference, 1¾ to 2; Pestarena, 2s. 6d. to 3s. 6d.; Placerville, 2¼ to 2¾; Plumas Eureka, 3 to 3¼; Port Phillip, ⅜ to ½; Richmond Consolidated, 8¼ to 8¾; St. John del Rey, 270 to 275; San Pedro, 2s. to 4s.; Sierra Buttes, 2 to 2¼; United Mexican, 3⅜ to 3⅞.

At the Swansea Ticketing, on Tuesday, 1227 tons of copper ore were sold, realising 8728l. 6s. The particulars of the sale were—Average standard for 9 per cent. produce, 77l. 13s. 2d.; average produce, 13; average price per ton, 7l. 2s. 3d.; quantity of fine copper, 160 tons 6¼ cwts. The following are the particulars of the two last sales:—

| Date. | Tons. | Standard. | Produce. | Per ton. | Per unit. | Ore copper |
|---|---|---|---|---|---|---|
| March 25 | 1577 | £75 6 0 | 10 7 16 | £ 5 6 11 | 10s. 3d. | £51 6 10 |
| April 22 | 1227 | 77 13 2 | 13 | 7 2 3 | 10 10¾ | 54 8 11 |

Compared with the last sale, the advance has been in the standard 2l. 7s., and in the price per ton of ore about 6s. 2d. The Betts Cove ore gave a produce of 5⅛, and sold at 9s. 10¾d. per unit; Caveira, produce 9, per unit 9s. 11¾d.; Vigsnaes, produce 28 3 16, per unit 11s. 5d.; Balade, produce 15⅝, per unit 11s. 3d.; Alcoutim, produce 11 3-16, per unit 10s. 6¼d. There will be no sale on May 8.

*** With this week's Journal a SUPPLEMENTAL SHEET is given which contains—Original Correspondence: The Protector Safety-Lamp (J. D Shakespear); Lighting of Collieries (W. F. Teale); the London Coal Supply W. J. Thompson); Coal Dust; Haulage in Mines; Air-Compressing Machinery; the Lead Trade in America; the Old Telegraph Mines of Utah (W. Bredemeyer); Lake Superior Mining (W. W. Stuart); Tharsis Copper Ore Company; New Zealand Kapanga; the Wynaad (India) Gold Fields (E. Harris); Is it right to Pay any Purchase Money for Mines (H. D. Hoskold, W. Salmon, E. Erwen); Mine Shares—Difference in Price; Cornish Mining, and its Flat Lodes (C. Bawden); the Discoveries in Cleveland, and Cornish Iron Mining (J. F. Pagen); Cambrian Mining Company (J. R. Anderson); Sketches of Cornwall—Historical, Biographical, and Topographical—No. I.; Great Laxey Mining Company—the Strike (G. W. Dumbell); Great Laxey—Devon Consols; Devon Great Consols; Killifreth Mine (J. W Hine); Preparing Ores for Market; the Letters of Mr. G. H. Sharp (A. Endean); Mr. H. G. Sharp, and the Craven Moor Mines (G. S. Gregory)—Meetings of Public Companies: West Goginan; South Frances; Santa Barbara, Pitangui.

DERWENT.—From the report in another column it will be seen that operations have now been resumed in the 93 fm. level, east of Westgarth's, where 44 men are employed on seven stopes, worth in the aggregate 7 tons 2 cwts. per fathom, and set at an aggregate price of 4l. 14s. per fathom. In the 74, west of Westgarth's, driving to the Burnshieldshaugh vein, more water is flowing.

BODIDRIS.—It is reported that the discovery made a short time since not only continues but improves; also that the ore-bearing part of the lode has become larger.

MINING IN NORTH DEVON.—The recent improvement in the price of lead has had a cheering influence upon the different silver-lead properties in North Devon. There are plenty of indications of silver-lead ore existing in considerable quantities in the Combmartin district, but the very low price ruling for some time past had a depressing effect on the adventurers. Should there be a further advance in the price of lead, we may expect to see some important works carried out in the North Devon district. Some old miners here think it very possible that lead will have a further rise of 6l. or 7l. a ton.

GREAT LAXEY.—It is understood that the management have given notice for the men to resume work on April 28, and if this be not done they will be paid off on May 1 for the balance of all work done. It appears that the directors are determined to adhere to their resolution that the men shall work on Saturday mornings first shift, and it seems only reasonable that they should do so, and it is to be hoped all disagreements will have been settled by Monday next.

GREAT DYLIFFE MINES.—A new company was registered at the beginning of the month for the purpose of working these celebrated mines. Owing to the depression existing in all branches of trade they have been acquired at an exceptionally low price, especially considering that they are taken over as a going concern, and that they are well supplied with machinery of the most approved description. The capital of the company is 20,000l., in 20,000 shares of 1l. each, fully paid up. Of these the first issue is 13,000, of which about half are taken by the vendors in part payment, the remainder of the purchase-money to be paid in cash. This will leave a reserve of 7000 shares not issued available for future workings. There are three shafts on the property, in one of which the levels are driven to the 125 fm. level on the Llechwedd-du lode, from which good returns are being made. This and the Esgairgaled lode are worked from the same shafts, the Dyliffe lode being some distance to the south of either of them, and there being no underground connection between it and them, there are practically two mines in good working order, with all appliances. There is an ample supply of water-power supplied from large lakes or reservoirs, which collect and store the water. One of the water-wheels is believed to be one of the largest in the kingdom, two of the others being of large size—45 and 50 ft. in diameter. There is also a very powerful pumping-engine, sawmill, and the general machinery and plant for raising, crushing, and dressing the ore. The last sale was on the 16th inst. of 45 tons, the result of less than three weeks dressing. The mines are held under Sir Watkin W. Wynn, Bart., at a royalty of 1-14th. It is said that when this property was held by Messrs. Bright, Cobden, and party the profits amounted to over 100,000l., and as yet not a quarter part of the property has been developed. Three of the richest lead lodes ever discovered in Wales have been as yet only partially laid open, and a more vigorous prosecution is in contemplation, and the question of boring machinery is now under consideration, in order to lay open ore ground more expeditiously. The mines are situated near Machynlleth, Llanbrynmair, and Llanidloes, in the Van district, and the London offices are 20, Moorgate-street, E.C.

## MANUFACTURE OF STEEL INGOTS.

With a view to economise the labour at present required in producing steel ingots, and also to improve the quality of the ingot by avoiding the tendency of the metal to boil when run into the moulds, Messrs. TAYLOR and WAILES, of Panteg, Monmouth, propose to use moulds, which consist of metal troughs placed side by side or parallel to one another, and in rear thereof they fit ways on which a travelling trough or gutter runs. This travelling trough is bent at right angles, at its forward end to form a spout parallel to the moulds, and it serves to deliver into the moulds the molten metal, which is conducted to it from an inclined stationary gutter or gutters in connection with the furnace. The stationary gutter is so situated with respect to the travelling gutter that the latter will be free to run under the fixed gutter, and receive therefrom a continuous supply of the molten metal while it is presenting its discharging mouth to the several moulds in succession. This arrangement not only facilitates the filling of the moulds, but by filling them from the top in a broad stream will remove all tendency which the metal has to boil in the moulds, and will also prevent the cutting of the moulds by the falling metal. The moulds, which will consist of open metallic troughs, may be made of any suitable length, and by an arched block or tile inserted in the moulds the metal poured therein will be divided up to form two ingots.

For facilitating the discharge of these ingots from the moulds they propose to place, transversely of these moulds and near their opposite ends, cross-bars of iron fitted with rough hooks or studs at equal distances apart, and so arranged as to enter the several moulds and bed into the molten metal. These bars will be connected at their opposite ends to a travelling crane, which, when the metal is sufficiently set to secure the connection of the bars with the ingots will be caused to lift the bars, and thereby draw out the ingots from the moulds. The strain thus put on the opposite ends of the castings will cause them to break in the line of the block or tile, and the ingots will then hang perpendicularly in the air, and may be delivered on to any suitable receptacle. In some cases they place a rectangular metal lifting strap with eyes at its extremities inside the moulds, and at such position that it will embrace the ingot to be cast at about the middle of its length. This strap fits close to the inside of the mould, and is covered over with clay, loam, brick, or other substance to prevent the fusion of the metal; this permits of the lifting out of the ingot horizontally by connecting lifting chains with the strap, and when the strap is disengaged from the chain it may readily be separated from the ingot.

In order to prevent any irregularity in the form of the ingot the ingot mould may be recessed to admit the strap, and the joints may be made good by clay loam. In some cases they propose to make the moulds of the length of the ingot desired, and to set two of such moulds end to end, making good the butt joints by means of clay puddle. The metal cast in such jointed moulds will when lifted out of the moulds by the means above described break at the middle of their length or at a point coincident with the line of junction with the moulds, and the ingots will then hang from the lifting bars as explained. This mode of clearing the moulds of the ingots will greatly economise the labour at present required for performing such duty, as the handling of the moulds and the ingots for this purpose is entirely avoided.

## WINDING AND SAFETY APPARATUS FOR MINES.

An improved apparatus, the invention Mr. M. NEUERBURG, of Cologne, which is of especial value when it has to be used in connection with different depths and winding levels, is at present being manufactured by Messrs. Nasmyth, Wilson, and Co., of Patricroft, near Manchester, the advantage being that the position of the cage on the endless winding rope may be changed as required to the extent of the difference between the depths or of the winding levels. One of the cages is provided with two pulleys at the top, and two similar pulleys at the bottom. Around these pulleys the winding rope is conducted in a peculiar manner—that is to say, it runs upon one quarter of the periphery of one of the top and one of the bottom pulleys, and around or upon three quarters of the periphery of the other top and bottom pulleys, and it extends upwards from the top pulleys and downward from the bottom pulleys. In combination with these pulleys he arranges worms geared with worm wheels fixed on the shafts of one of the bottom and one of the top pulleys, such worms being fixed on the upper and lower extremeties of a vertical shaft provided with a crank handle or other means for turning it. The worm gearing holds the pulleys and prevents their turning when the apparatus is working; but when it is desired to adjust or change the position of the cage upon the winding rope such adjustment or change is effected by turning the vertical shaft, and thereby through the said worms and worm wheels raising or lowering the cage upon the rope. To relieve the rope of strain one of the said top or upper pulleys has its shaft or axis supported in levers, whose fulcrum is at one end, and whose other end is connected with and pressed down by a spring attached to part of the framework of the cage.

To secure increased safety the inventor passes a safety rope over a pulley whereon the weight of the moving part of the apparatus will be borne if the winding rope should break, but this rope is to be so connected with the catch mechanism of the winding cage as to ensure the action of the said mechanism before the safety rope breaks. Another part of the invention comprises eccentric catch mechanism for winding cages. The said catch mechanism has eccentric toothed pieces connected by angle levers and rods with a cross-bar arranged in combination with a strong spring. This cross-bar and spring are connected with the rope by a vertical rod or bar. When the cage is stopped, or when the rope breaks, the said angle levers will be pressed outward by the connecting rods under the pressure of the spring upon the said vertical rod or bar. The said eccentrics are then pressed against the wood guides, their teeth biting or taking a firm hold of the same. This mechanism is extremely simple and efficient, and more certain in its action than the ordinary devices employed for this purpose.


**CAPPER PASS AND SON, BRISTOL**
PURCHASERS OF
LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, HARD LEAD, BRASS SLAGS AND ASHES, COPPER REGULUS, MATTE, SCORIA, TIN ASHES, TERNE ASHES, &c., and MIXED ORES or REFUSE, containing LEAD, COPPER, TIN, or ANTIMONY.

**GEO. G. BLACKWELL,**
5, CHAPEL STREET, LIVERPOOL,
PURCHASER OF
MANGANESE, ARSENIC FLUOR-SPAR, WOLFRAM, BLENDE, CALAMINE, CARBONATE and SULPHATE OF BARYTES, ANTIMONY ORE, CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONE OCHRES AND UMBERS, CHINA CLAY, LEAD ORE FOR POTTERS TALC, PHOSPHATE OF LIME, &c.

**AUSTRALIAN TIN—PRIZE MEDAL, 1877.**
THE UNDERSIGNED is PREPARED to EXECUTE ORDERS for the CELEBRATED
"KANGAROO" BRAND.
S. L. BENSUSAN.
Kangaroo Tin Works, Sydney, December, 1878.

**THOMAS BROTHERS,**
MINING SHAREBROKERS AND MINERAL SURVEYORS,
STRAND CHAMBERS,
STRAND STREET, LIVERPOOL.

**HENRY WIGGIN AND CO.**
(LATE EVANS AND ASKIN),
NICKEL AND COBALT REFINERS
BIRMINGHAM.

**T. V. CLARKE AND CO.,**
TRUNDLEY LANE, SURREY CANAL,
DEPTFORD, S.E.
ARE BUYERS OF
CALAMINE and BLENDE; ZINC and LEAD ASHES, SULPHATE OF LEAD, and OTHER METAL RESIDUES.
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Mines inspected and reported on at home and abroad.

FIRST QUALITY
**FIRE-PROOF CLAY.**
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**TO CAPITALISTS AND OTHERS, INTERESTED IN MINING.**
A MINING ENGINEER, of extensive experience in the WEST OF ENGLAND is in a position to OBTAIN for CLIENTS FREE GRANTS of PROPERTIES where VALUABLE MINERALS ARE KNOWN TO EXIST.
Apply at once, as this advertisement will not be repeated, "F. G. S.," MINING JOURNAL Office, 26, Fleet street, E.C.

FOR SALE, TWO HUNDRED PRINCE PATRICK LEAD MINING SHARES. Price 25s. No offer for less than Fifty Shares entertained.
Address, "O 70," care of Henry Greenwood, Advertising Agent, Liverpool.


### LEAD ORES.

| Date. | Mines. | Tons. | Price per ton. | Purchasers. |
|---|---|---|---|---|
| April 12 | Roman Gravels | 150 | £ 9 6 6 | Walker, Parker, and Co. |
| — | ditto | 50 | 9 10 0 | E. C. Goodhardt & Co. |
| 19 | Foxdale | 100 | 13 12 6 | Sheldon, Bush, and Co. |
| 23 | Red Rock | 40 | 8 13 0 | Jacob Walton and Co. |
| — | Minera | 50 | 9 18 6 | Walker, Parker, & Co. |
| — | ditto | 50 | 9 18 6 | ditto |
| — | ditto | 50 | 9 17 6 | ditto |
| — | ditto | 50 | 9 9 0 | ditto |
| — | ditto | 50 | 9 18 6 | ditto |
| — | ditto | 15 | 9 15 6 | ditto |
| 24 | Ladywell | 20 | 8 6 6 | ditto |

### BLENDE.

| Date. | Mines. | Tons. | Price per ton. | Purchasers. |
|---|---|---|---|---|
| April 23 | Minera | 106 | £ 3 8 0 | Kenrick and Son. |
| — | ditto | 109 | 3 11 0 | ditto |
| — | ditto | 54 | 3 6 0 | ditto |
| — | ditto | 54 | 3 7 6 | ditto |
| — | ditto | 81 | 3 0 6 | ditto |
| — | ditto | 50 | 3 9 0 | ditto |
| — | ditto | 37 | 3 9 0 | ditto |
| — | ditto | 40 | 2 16 0 | Bagillt Company. |

### COPPER ORES.

Sampled April 9, and sold at Swansea, April 22.

| Mines. | Tons. | Produce. | Price. | Mines. | Tons. | Produce. | Price. |
|---|---|---|---|---|---|---|---|
| Betts Cove | 114 | 5⅛ | £2 11 6 | Balade | 76 | 15⅝ | £8 16 6 |
| ditto | 113 | 5⅛ | 2 10 6 | ditto | 76 | 15⅜ | 8 15 6 |
| ditto | 112 | 5⅛ | 2 10 0 | Alcoutim | 7 | 21¾ | 11 10 6 |
| ditto | 111 | 5⅛ | 2 11 0 | ditto | 18 | 19¾ | 10 8 6 |
| ditto | 2 | 7⅛ | 3 6 0 | ditto | 81 | 10¾ | 5 9 6 |
| Caveira | 75 | 9 | 4 9 0 | ditto | 17 | 6¼ | 2 19 0 |
| ditto | 75 | 9 | 4 9 6 | ditto | 22 | 7⅛ | 3 14 0 |
| ditto | 74 | 9 | 4 10 6 | Copper Reg. | 19 | 38¾ | 22 1 0 |
| Vigsnaes | 73 | 31 | 18 3 6 | ditto | 14 | 41¾ | 23 10 0 |
| ditto | 73 | 31 | 18 1 6 | Copper Ore | 29 | 16¾ | 8 15 0 |
| ditto | 74 | 22¾ | 12 4 6 | ditto | 4 | 19¾ | 10 12 6 |

### TOTAL PRODUCE.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Betts Cove | 452 | £1148 | 10 6 | Alcoutim | 115 | £ 676 | 2 0 |
| Caveira | 224 | 1004 | 4 6 | Copper Regulus | 33 | 747 | 19 0 |
| Vigsnaes | 218 | 3514 | 13 0 | Copper Ore | 33 | 296 | 5 0 |
| Balade | 152 | 1337 | 12 0 | | | | |

### COMPANIES BY WHOM THE ORES WERE PURCHASED.

| Names. | Tons. | Amount. |
|---|---|---|
| Copper Miners' Company | 333½ | £ 1,071 13 2 |
| P. Grenfell and Sons | 17 | 50 3 0 |
| Nevill, Druce, and Co. | 19 | 418 19 0 |
| Williams, Foster, and Co. | 408 | 4,450 13 0 |
| Charles Lambert and Co. | 83½ | 989 4 8 |
| Sweetland and Co. | 138 | 622 11 0 |
| Landore Copper Company | 237½ | 1,125 2 2 |
| Total | 1227 | £ 8,728 6 0 |

## Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be *filed* on receipt; it then forms an accumulating useful work of reference.

MINING JOURNAL.—Bound volumes wanted of the Journal for the years 1870, 1871, 1872, and 1876. Any subscriber having them to dispose of will oblige by stating price. Address, "R. C. C.," *Mining Journal* Office, 26 Fleet street.

LUDCOTT AND WREY.—Can any correspondent furnish the date at which the company working these mines, the winding-up of which was commenced in 1868, was finally dissolved.—A. W. B.

CALIFORNIAN MINES AND EUROPEAN COMPANIES.—"T." (Boulogne, Paris.)—There is no doubt that a French or English company having its chief office in Paris or London, and composed exclusively of English or French citizens, can hold, buy, sell, transfer, work, and otherwise manage a mine situated in California, and purchased from a Californian company. The Californian law gives aliens in these respects the same rights as American citizens. The European purchasers must ascertain that the Californian company had a sound title. The legal authorities cannot at the moment be cited, but they shall be searched for. "T." should be especially cautioned against the so-called gravel claims which are just now being freely offered. These claims when they have been in the hands of Californians have not been unprofitable, but the system of working which is adopted has resulted in the fouling of the neighbouring rivers and damaging adjacent lands; consequently the landowners have had an enormously heavy lawsuit against the mine owners, which has been going on for several years. The final decision is a decree by Judge Keyser, of perpetual injunction against the mineowners, restraining them from letting off their tailings into the rivers. This for the time will paralyse gravel concerns, as some new processes of treatment will have to be discovered, hence those interested are trying to sell. Ultimately, however, the effect may be advantageous from its compelling owners of gravel claims to utilise much that is now washed to waste. Under the United States and also under the Californian laws aliens have no right to take up mining claims or to purchase land from the Government, but they can hold valid title when they purchase from citizens. The right to mining property (all which belongs originally to the people of the United States) can only be acquired in accordance with sections 2318 to 2352 of the Revised Code. Sec. 2319 declares the mineral lands (reserved by the preceding section) open to purchase (from the Government) by citizens and citizenship, must be proved in accordance with sec. 2321; but sec. 2326 directs that (after formalities mentioned are complied with) patents shall issue to those who have established their claim to them, and adds "Nothing herein contained shall be construed to prevent the alienation of the title conveyed by the patent for a mining claim to any person whatever." As to citizenship, Commissioner Drummond decided (June 7, 1871) that a corporation is in no sense a citizen within the meaning of that term as used in the Constitution of the United States, or in the laws relating to the public lands. According to the common law of the United States, the resident officers and servants of an alien corporation would be in precisely the same positron as if they were employed by a corporation organised under the laws of the United States, or of a State. But as practically no alien corporation could sue and be sued, it is preferable for some of the alien corporations, resident officers, or servants, to be incorporated under an American charter or certificate (as has been done in the case of the Richmond Company), so as to secure a better local status.

*Received*,—"C. W." (Serra de Cocaes)—"W. T."—"Shareholder" (South Condurrow)—"M. W.": We should like to see the report: it shall be returned if not inserted—"T. H. N."—"E. H."—"Z"—"F. B." (Abersychan)—"R. N." (Brighton): Yes; but not for the reason assigned—"Shareholder" (Wheal (Grenville)—"Shareholder" (Roman Gravels)—"Constant Reader" (Bath)—"An Anxious Enquirer" should write to the Secretary—"M. E.": Owing to the holidays, the proof did not reach us in time to make the corrections—which, however, are of no material consequence—"B. A. R."

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.


# THE MINING JOURNAL,

## Railway and Commercial Gazette.

*LONDON, APRIL 26, 1879.*


### ENGLISH AND FOREIGN MACHINERY, &c.

With a view to making our mechanics and engineers aware of the position of machinery abroad, and the progress made as compared with that at home, the Leeds Chamber of Commerce sent a number of the most efficient artizans in that town to the Paris Exhibition to report upon what they saw there. The report has just been issued, and contains much valuable, interesting, and suggestive matter. Some of the men express the opinion that in England more attention should be paid to technical education, a subject which we have frequently urged in connection with the engineering and mechanical branches of trade. We are also told that the French are closely treading on our heels with respect to improvements in cloth-finishing machinery, whilst Belgium is marching rapidly along in the same direction; in fact, in almost every branch of mechanical engineering the foreign producers are able to turn out work in every way equal to our own, so that no actual necessity exists, except in some few special cases, for other countries to come to England for their requirements. This forcibly shows what has so long been pointed out that English workmen should not flatter themselves that they are very superior indeed to the foreigner, who in construction and other things they have generally looked upon as being far behind them. Of locomotive engines it is stated that they were generally fair specimens of workmanship, almost equal to those made by first-class firms in England, although the peculiarities of design were not such as would find favour amongst our engineers. In stationary engines one of the reporters informs us that English makers do not show to advantage, for even making due allowance for the increasing complications which have been introduced in the valve gears in a great number of foreign engines, there can be no doubt they are far ahead of us in many respects. They are exceedingly systematical in design, give evidence of careful study of form and proportion, showing that the makers have paid the greatest attention to everything that would lead to economy in working. This statement, coming as it does from a working man, should be well considered and pondered over by the class to which he belongs, for it cannot be supposed that the writer could be at all biassed in favour of the foreigner. With respect to engines of a larger class, the workmanship in nearly every case leaves nothing to be desired; but as several of the French engines have been purchased by the Government, it is not unfair to infer that these may have been previously ordered, regardless of cost, for the Exhibition. Turning to another direction—that of portable engines—it is stated we decidedly beat all comers. In general machinery, such as that used for the production of cotton, flax, silk, and wool, the foreigner did not come up to us. The conclusions drawn are that in engineering and tool making foreign nations take a higher position than in textile machinery.

New mechanical ideas we are told are not confined to England and America, as they were supposed to be some 20 years ago, when continental makers in the practical working out of important mechanical inventions took their cue almost without exception from England. Now they appear to be in every way independent of us, have learned to think for themselves, and have the courage to carry out their own ideas. At the same time, remarks one of the writers, there appeared in that part of the Exhibition to which allusion is made a certain want of bold and striking novelties in the English department. It was as if the English spirit was settling down comfortably to the good things left them by a previous generation. With few exceptions, all the really new ideas which characterised the present Exhibition were found in foreign departments—such, for instance, as the electric light, gas engines, self-binders, successful tramway locomotives, air-compressing and rock-boring machinery, and some of the boldest schemes of civil engineering. This is certainly a statement we were not prepared for, and we believe it is one that will surprise a good many of our manufacturers as well as artisans, and certainly ought not to be without its effect upon the future of British skill and industry. But the reporter goes a little further, for he states that the progress made by foreign countries in the development of existing inventions is still more evident, the impulse which caused it being doubtless the force of necessity. Thus, more expensive coal, and of inferior quality, has developed a number of ingenious contrivances for saving fuel which are scarcely yet known or appreciated in England. With regard to scientific education in the industries to which we have been alluding, the writer states that the want of large capitals which could be liberally spent in experimental investigation has forced a more scientific education of engineers, and has thus developed a clearer understanding of principles, and their sound practical application. The want and expense of thorough good workmen have obliged the Americans not only to invent labour-saving machinery of the most ingenious description for every special trade, but also to adopt certain forms and contrivances by which the construction and erection of machinery of every kind is facilitated, simplified, and cheapened. It would be foolish not to acknowledge that English engineering has progressed in the same direction in a marvellous degree, and in this respect the English department shows examples of the greatest importance (hydraulic rivetting, &c.) But certain necessities were not so pressing, and the fact of prosperous trade, which seems to have had possession of the markets of the whole of the world, did not urge English engineering during the last 15 years to exertions which were forced on their continental rivals. The very drawbacks in those countries produced a certain impetus and impulse, the fruits of which are becoming evident, since they have learned to act independently. The form of the stationary steam-engine of the day is in its main features an American production. The greatest peculiarity which the Paris Exhibition showed in dozens of variations is its valve gear, which has been developed on the Continent with apparently remarkable success, and is now being reluctantly adopted by English makers.

This proved what the writer wished to show—that in the development of existing inventions the Continent has become as active and as orignally independent as England, so that to a certain extent this country has ceased to lead as it did 20 years ago. In design of machinery generally the Continent, and France especially, has become wonderfully English. Formerly there was a striking difference in the character of a machine or engine of continental or English construction, but now we meet everywhere, if not always, the strong simple forms which were peculiar to English designs. Creusot, Farcot, or Five Lille are scarcely distinguishable from first-class English makers in this respect, except as far as they have more readily adopted the American forms, which in a slower degree are undoubtedly making their way in this country. The conclusions come to by the reporter were—that English engineering in the last 10 years has progressed steadily and quietly without great exertions, satisfied with a splendid market, and to a great extent with the usual trade routine, which no doubt is much more profitable than the search by means of expensive experiments of new inventions and improvements, or the troublesome and often fruitless study of theories and principles—but the countries on the Continent during the same time have learned and worked immensely, so that the market for engineering in those countries must naturally close; but England, from the enormous advantages of its geographical position, will still maintain its position and its established commercial preponderance. but late experience has shown that every exertion in the production of the vast machinery by the cheapest means is necessary to maintain the position of this country even on these neutral goods. We commend this latter remark to those who are crying out for high wages and short working hours, which are amongst the things that now enable foreigners to supplant us in some markets that were almost entirely in the hands of the English manufacturer.

In tool-making we are told by one expert that the foreign makers take a higher position than us in the production of those for machinery, whilst another one states that very few engine tools were exhibited by English makers, and of the foreign exhibits it might be said that the best in the class were palpable imitations of our own ordinary productions. In hand-made boilers it is stated that the French section is inferior to the English. With regard to moulding, the reporter states that in the foreign departments it must be admitted that they are well up in loam and dry-sand castings, and that in green-sand castings they are close upon our heels. In cut nails the workman who writes on that branch says that if we intend to hold our own a most determined stand will have to be taken by both masters and men. He is convinced that everyone who cares for the future welfare of this country will have to put his shoulder to the wheel. Few but the most ignorant will concur in this pithy but homely remark, and all parties connected with the engineering and mechanical trades will also agree with us when we say that the Leeds Chamber of Commerce is deserving of the thanks of the whole community for the instructive lesson the working men sent to the Paris Exhibition have read to us.

### CANADIAN RAILWAY WORKING.

One of the causes of the grievous financial disappointment which has attended the efforts of the Canadian railway interest is the heavy cost of working Canadian lines. Traffic is skinny, and working expenses are severe; the result is that dividends are meagre, and not only meagre but also few and far between. In the second half of 1878 the ratio of the working expenses to the traffic receipts on the Grand Trunk Railway of Canada was 76·70 per cent., as compared with 75·02 per cent. in the corresponding period of 1877, charges for renewals being included in both half-years.

The Grand Trunk of Canada has now the advantage of the able services, as President, of Sir HENRY W. TYLER, and Sir HENRY has analysed, in his usual exhaustive manner, the circumstances which have rendered the ratio of the working expenses on the system so unfortunately high. Sir HENRY shows in a lengthy "memorandum" that the extreme cold of the Canadian winters and the obstructions caused by snow have a very great effect upon the expenditure made by the Grand Trunk Company for fuel. Thus the consumption of wood per engine mile and of coal per engine mile fluctuated as follows, month by month, in 1875-6, which may be regarded as a fairly representative year:—

| | | | | |
|---|---|---|---|---|
| 1875—July | Wood, lbs. | 91·47 | Coal, lbs. | 43·48 |
| August | | 93·35 | | 43·63 |
| September | | 98·15 | | 45·65 |
| October | | 107·46 | | 49·75 |
| November | | 102·06 | | 53·75 |
| December | | 126·21 | | 57·61 |
| 1876—January | | 125·78 | | 57·41 |
| February | | 133·22 | | 60·32 |
| March | | 128·48 | | 60·13 |
| April | | 118·18 | | 53·31 |
| May | | 104·30 | | 48·99 |
| June | | 98·57 | | 45·57 |

Last year at Suspension Bridge and Black Rock (Buffalo Bridge), the Great Western Railway Company of Canada paid $3 and $3·10 per net ton for coal, and the Grand Trunk at Black Rock (Buffalo) $3 and $3·05 per net ton. At Detroit the price paid by the two companies was just the same—$2·85 per ton. While Toronto is the most easterly point of the Great Western system, the central and most important district of the Grand Trunk lies between Toronto and Montreal, a distance of 333 miles; and from Toronto, the most easterly point of the Great Western, to Portland, the most south-easterly point of the Grand Trunk, the distance is 630 miles; and to Rivière-du-Loup, the most north-easterly point, the distance is 616 miles. It is upon this portion of the Grand Trunk system, east of the Great Western, that about five-sixths of the whole consumption of fuel takes place. The nearest points of production for coal over the whole of this distance are on the western side, the coal fields from which the Great Western is supplied; and on the eastern side the coal fields of Nova Scotia, distant more than 1000 miles by sea, or such supplies as can be obtained from England, in competition with Nova Scotian coal. Sir H. W. TYLER has been at great pains to exhaust the subject of the fuel expenditure of the Grand Trunk of Canada, because fuel figures for 17½ per cent. in the total working expenses of the system. Under these circumstances, Sir HENRY arrives at the prudent and sensible conclusion that the Grand Trunk Company must leave no stone unturned to reduce the cost at which fuel can be charged out for consumption, and to increase the proportion of work obtained from its employment.

Sir HENRY anticipates that wood will become more expensive in Canada, and that wood of good quality will be more difficult to obtain and less effective for producing steam on portions of the Grand Trunk system. The company, he urges, must proceed with the conversion of its engines; and he thinks that if the price is not raised by exceptional or artificial causes a larger proportion of coal must be employed. It follows as a consequence of this opinion that Sir HENRY urges the construction of more fuel sheds, and a general improvement of the coaling arrangements of the Grand Trunk Company.

### TRAMWAYS.

The Report of the Lords' Committee on the Use of Mechanical Power on Tramways concurs with the recommendations of the Commons' Committee last year, with certain modifications. The importance of the report is increased by the fact, as it may be taken as setting forth the matured views of the Select Committees of the two Houses of Parliament on a question of great public interest. It is deserving of remark that neither of the committees discourage the use of steam or other mechanical power on tramways. At the same time they recommend that the use of such power should only be conceded for a limited period, not exceeding seven years. They suggest the provision of efficient self-acting brake machinery, regulated to the satisfaction of the Board of Trade, and the fitting of a fender, and, as far as possible, of an indicator to every engine; that the engines should be free from noise, smoke, and the emmission of steam; that the fire should be concealed; that the passengers should be protected from the machinery; that the engine-driver should be placed in front of the engine, so as to command the fullest possible view of the road before him; and that the Board of Trade should have power to inspect engines and boilers whenever necessary, and to prohibit their use when found to be unsafe. There is nothing in these suggestions to which reasonable objection can be taken. The use of steam or other mechanical power on tramways is undoubtedly experimental. At present the experience gained is of too limited character to justify the use of mechanical power in the same way as animal power, without special regulation. All that tramway companies, in the interests of the public, can ask is that they shall be free to use such traction power as they deem advisable, subject to the authorisation of the local authority and the sanction af the Board of Trade. The other recommendations of the Committee are of less general interest, but scarcely of less importance. Substantially, the Committee propose to remove all restrictions as to the introduction of tramways in any given district, with the proviso that the consent of the local authority must be obtained, reserving an appeal to the Board of Trade where it is proposed to carry the line through more than one district. The committee also consider it desirable that wherever possible tramways should be constructed but not worked by the local authority. On the whole the report will, we think, commend itself to public approval, and we may hope in due time to see its recommendations embodied in an Act of Parliament.

At the meeting of the Society of Engineers, on Monday (Mr. Joseph Bernays, vice-President, in the chair), a paper was read by Mr. J. L. HADDAN on "The essentials which should govern the Construction and Working of Tramways." The author observed that when tramways were first introduced they were a great advance upon the ordinary roads, but that the modern improvement of roadways had, in the present day, led almost to a reversal of the relative positions of road and tramway. In America the tramways were superior to the roads, because the latter were sacrificed to the former. The tramrail there, moreover, was available for the moderate ordinary traffic, whilst the speed of the tram service was about 20 per cent. greater than in this country and on the Continent. Mr. Haddan alluded to the general tendency to employ wood in roadways, and he described a system of construction by which a road could be made with a perfectly flat surface, and yet be well drained, and which should have the tramway incorporated with it. The tramrails, he said, would be of wood, and the roadway would be kept surfaced with grit, so that the wood would not form the actual wearing surface. This system of tram and roadway, the author observed, would be homogeneous, and would combine the best possible road for ordinary vehicles, with a perfect tramway for special carriages at less cost than the present method of construction. The author condemned the indiscriminate introduction of railway and omnibus principles into the construction and working of tramways, and described his proposed arrangement for meeting the requirements of a tramway service. This consists of a locomotive engine to be worked by steam and air, the steam being used for compressing during the journey its own supply of air as well as that which supplies the continuous motive power for propelling the cars. By reversing the same driving mechanism acts as a continuous brake, and the same system is so arranged that the driver constantly feels the pull of the train upon a regulator handle. The withdrawal of his hand from this handle is to instantly cause the steam power to block the train. Thus the brake mechanism would always be in action, instead of lying dormant as in ordinary continuous brakes. The author, in conclusion, stated what in his opinion were the technical, physical, and administrative requirements of mechanical traction on tramways generally.

THE EDISON LIGHT.—A document of considerable interest to the commercial as well as to the scientific world has just been made public at the Great Seal Patent Office. It is the specification of the invention of "Thomas Alva Edison, of Menlo Park, in the State of New Jersey, U.S., for Improvements in the Method and Means for Developing Electric Currents and Lighting by Electricity." The first feature of the invention relates to the means for developing the current of electricity by mechanism, and the second part refers to the electric light itself, the method of regulating the intensity of the light, and preventing injury to the incandescent material. A vibrating rod or prong—like that of a tuning fork—is set in motion by a piston and rod worked by air, gas, or steam under pressure. Upon this prong is fitted an electro-magnet, opposed to which is the cone of a permanent magnet. The vibratory motion causes these magnets alternately to approach towards or recede from each other. A powerful current is thus set up in the helix of the electro-magnet, and this current is available for the electric light. As to the light itself, the general arrangement is as follows:—A rod of platinum, silicon, titanium, or some similar material is employed as the light-giving body, and is surrounded by a double helix of fine wire, which is placed within the circuit of the electric current. By the heat evolved through the resistance of the fine wire helix to the passage of the current the platinum becomes incandescent. It now becomes necessary to prevent the fusion of the incandescent material, and this is effected by an automatic thermal regulator. It consists merely of a lever which closes or diverts the electric current, being operated on by the incandescent rod in the act of expansion by heat. Thus, when the heat appoaches the point of fusion the expansion of the rod moves the lever, and either diverts or closes the current. In the first instance it merely diverts a portion of the electric current, but in case the temperature of the incandescent material does not speedily become reduced it entirely closes the current until, by the contraction of the rod, the lever is released, and the current restored. These movements take place with great rapidity, so that there is a continual interruption and restoration of the current. Preferably the light is enclosed in a globe or case, and to reduce radiation alum water is used between two concentric glass cylinders. Coloured glass is likewise employed, and chemical solutions, such as sulphate of quinine, may be employed to reduce the refrangibility of the light. The specification also describes apparatus for producing a secondary current if required.

FOREIGN COMPETITION IN THE TUBE TRADE.—We hear that Messrs. Le Gros, Mayne, Leaver, and Co., of Queen Victoria-street, are now introducing German manufactured tubes for locomotive and marine boilers, &c., into the English market, it is stated, at lower prices and of finer quality than those made at home. This is probably owing to the lower wages and longer hours of the industrious Teuton. We noticed especially some novelties in tubes for conveying compressed air, and for the pneumatic despatch, such as are now being used in the Paris postal service, and in Berlin, Munich, &c.

PURIFYING AND FILTERING WATER.—The second part, extending from 1867 to 1876, both inclusive, of the Abridgments of Specifications relating to Purifying and Filtering Water, including the distillation of sea water to produce fresh water, has just been issued by Her Majesty's Commissioners of Patents (price 7d. by post). The information gained by the perusal of these little volumes is often very curious—by way of example, reference may be made to the materials which have been proposed for filtering purposes. Various inventors have suggested a porous alloy of zinc and iron, alumina, asbestos, porous beton, composed of sand and tar, coke, coal, carbon, charcoal, compressed materials, felt, ferric oxide, gypsum, hydrated ferric oxide, spongy iron, lime or its salts, magnesian limestone, magnetic carbide, manganic dioxide, paper, paper half stuff, paper pulp, peat, perforated plates or material, powder of platinum, porous

blocks of porcelain, pyrolusite, sand, silicated carbon, slag, sponge, wood, wool, and woven fabric. So formidable a list of materials for performing a simple operation should suffice to convince inventors to whatever branch of industry they may direct their attention of the absolute necessity of ascertaining what has already been done before applying for patents.

THE NATIONAL BANK OF WALES (Limited).—It is gratifying to learn that this bank has proved a complete success, the number of applications having far exceeded the most sanguine expectations. There are already 562 shareholders in the bank, and the directors will proceed to the allotment of shares on Tuesday next at the chief offices of the bank, Norfolk-street, Manchester.

DEATH OF CAPTAIN WILLIAM VIVIAN.—The highly valued and very able local manager of the Mwyndy Iron Ore Company (Limited), Captain WILLIAM VIVIAN, died on April 18, after having suffered severe illness for many months. Messrs. John Taylor and Sons have thus lost another excellent agent, one who has served them faithfully both at Mwyndy and at other mines previously with great skill, and with most scrupulous truth and fidelity. Captain Vivian combined with a perfect knowledge of mining great scientific knowledge as a geologist, which enabled him to contribute many useful papers upon geological subjects to several local societies, as well as to those in Cornwall.

DEATH OF DR. MURCHISON, LL.D., F.R.S.—The medical profession and the world of science have lost one of their most distinguished members by the death of Dr. CHARLES MURCHISON, which took place very suddenly on Wednesday. Dr. Murchison had a very successful career at several of the best public schools in Scotland, and ultimately, in 1851, graduated M.D., with honours and gold medal, at the University of Edinburgh. He was then immediately appointed Physician to the British Embassy in Sardinia (now the kingdom of Italy) during the ambassadorship of the late Sir Ralph Ambercromby. Subsequently he proceeded to India in the service of the East India Company, where he acted on the medical staff of the 2nd Fusiliers during the last Burmese War. After service abroad for some time he returned to England, and at once commenced the active practice of his profession, in which he rapidly rose to distinction. He became Physician to the Middlesex, St. Thomas's, King's College, and London Fever Hospitals, and besides had a very large and growing private practice. He yet found time to contribute valuable works and papers to the advancement of medical science. Among his most valuable works were those on subjects on which he was considered a great authority—his "Treatise on Continued Fevers;" his "Lectures on Diseases of the Liver;" &c. It is only about a fortnight ago that Dr. Murchison was appointed, with the sanction of Her Majesty, physician to their Royal Highnesses the Duke and Duchess of Connaught. He has left a widow, cousin of the Bishop of Ripon, and several children. We may add that he was the younger son of the late Hon. Alexander Murchison, of Jamaica, and of Elgin, N.B.; cousin to the late Sir Roderick Murchison, Bart.; and the only and younger brother of Mr. J. H. Murchison, F.R.G.S., whose name has been so familiar to our readers for many years past. We believe that Dr. Murchison was about 49.

## REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

*April* 24.—I will vary my report this week by a description of the various mines and works that lie contiguous to the line of the Great Western Railway from Ruabon to Bala.

On leaving Ruabon we reach on our left in about half a mile the Wynnstay Colliery of the New British Iron Company. The pits are nearly 400 yards deep, and the principal coal seams from the "Yard" downwards are worked for a long way to the south-east under Wynnstay Park, the property of Sir W. W. Wynne, Bart., M.P. One or two great north and south faults are crossed in this direction, which are all upthrows to the east. One of these bring up the "Chwarele" coal, which is probably the equivalent of the Ariey Mine of Lancashire opposite to the main coal.

We now leave the Great Western main line, and on our left at a little distance we see the Plaskynaston Collieries, the pits of which are hardly so deep as those just named. This colliery also works the coal seams lying under the Wynnstay Park. It has been a very succeseful colliery, chiefly owing to the fact that a good portion of the Lower Yard coal exists in a channel form in the property; it is owned by Lancashire men, and its managers and overmen have been and are Lancashire men. Indeed, there is quite a Lancashire community, with their simple homely ways, and with their chapel and minister, in the midst of the Welsh population.

On our right we now see the chimneys of the Plasynwern Fire-brick and Tile Works; they have been recently erected, and are also owned and managed by Lancashire men. The works are adapted to do a good trade.

As we enter a deep cutting we see on our left one of the freestone quarries worked by Mr. Henry Dennis. By one of the numerous north and south faults that traverse the district the Cefn sandstone in which these quarries are worked is thrown up into a long ridge. We see the succession of the beds as we pass through the cutting, together with the coal seams lying below it. These sandstone beds prevail over the district northwards, and they are worked at Minera; they yield a good fine-grained freestone, which is largely used in building; it is durable, and is easily worked for the finer purposes of architecture. The sandstone beds themselves, with their associated shales and coals, correspond to the Pennant grits and sandstones of the South Wales, Forest of Dean, and Bristol coal fields, the productive coal measures lying below them.

As we emerge from the cutting we see on our right the extensive ironworks of the New British Iron Company. These works are now unfortunately idle; they were originally established to work the ironstones that lie between the coal seams of the district, and long within my memory the region on both sides of the line here was a veritable black country. But gradually it is changing its aspects—the old pit heaps are becoming grass covered and planted, and are fast assuming that ornamental appearance which our other coal fields are promised to assume when our coal measures are exhausted, and when those who continue to live in this country will live "on their means." Still, much of the lower seams remain ungotten, and at a little distance from the line on the right are numerous fire-brick and sanitary ware works, among which I may mention Seacombe's, Bower's, and those of the Plas Ucha Company. On our left are the boiler works of Mr. Jones, which is not an uncommon name in these parts; also the Plaskynaston Foundry, where good colliery and brick-work machinery is turned out; a chemical works also, where shale, pyrites, and other bye products of the district are applied to a useful purpose. A little further off is the Cefn Pottery, where a fine yellow clay of the coal measures is made up into articles for domestic use. Latterly the work has been taken up by Mr. J. C. Edwards, in whose hands the property will probably receive a development worthy of its resources.

As we draw near Trevor Station we see on our left the Trefynant Works of the gentleman just named, who is one of the oldest established and most successful manufacturers of fire-clay products in the district. A few hours in his works may be well spent, containing as they do machinery and appliances which are the result of many years thought and labour. The seam of fire-clay worked is that which lies under the Llwynenion or "Half Yard" coal, and the finished productions are among the best made.

Looking south-east yard over the Ponteysyllte Aqueduct of the Shropshire Union Canal and the Cefn Viaduct of the Great Western Railway down the lovely valley of the Dee, we just catch a sight of the Red Brickworks of Mr. Edwards at Penybont, near Newbridge. The deep red marls of the Permian strata are worked here into red and blue pressed bricks, floor and roofing tiles, ridge crests, and draining pipes, with other articles.

Shortly after leaving Trevor Station we reach the edge of the coal measures and the junction of this formation with the millstone grit. On our right just at this junction are the brickworks of Mr. Mason, who works the clays lying between the "Chwarele" and "Lowest" coals, the result being a sound useful cherry red brick. The Lowest coal is seen lying upon the top beds of the millstone grit, which are here worked by another Lancashire company. The stone is hard, but readily works; it is a most durable stone, and for docks, foundations, steps, copings, and all purposes where wear and weather have to be resisted it can hardly be surpassed; it has, however, hardly warmth of colour enough to make it an agreeable building stone. We will proceed with our journey next week.

I fear the practice of the "practical geologist," alluded to by Messrs. Watson in their report last week, is as limited as his information. Such ignorance is scarcely credible.

A fair trade is doing in house coals, and the prices would be better but that an accumulation of old stock, some 40,000 tons, is thrown upon the market from a colliery recently closed.

## REPORT FROM CORNWALL.

*April* 24.—There is some natural dissatisfaction in the county at the disadvantage under which the producers here labour compared with holders elsewhere. The standards of the smelters are certainly not up to the mark of London prices, though it must be admitted that they have been paying of late a somewhat higher figure than the official rates. This, however, as we have had again and again to point out, is a most objectionable practice. If there is any meaning in standards at all they should express the current market rate; when they do not they are more than worthless, for they mislead. Then, again, it does seem contrary to all that we have been accustomed to hear that English tin should fetch a lower price than foreign. It used to be one of the chief points of a smelter's creed, insisted upon at least very strenuously, if not very firmly held (which was all the same thing to the outsiders), that English tin was better than foreign, and that without a judicious admixture of English the best qualities of metal could not be produced at all. One of the main causes which has enabled the smelters to retain the smelting in their own hands has been the assumption that smelting cannot be conducted properly unless the black tin of different mines is mixed. Now, this we have never been able to understand. It did not use to be so, for every mine smelted its own tin, and for a long time after that, before the introduction of the present system, the smelting houses were rather in the light of co-operative establishments, where provisions were made for tin smelting, and each mine did its own work; while later still, the smelter returned the produce to the miner at a certain percentage. The combination of smelting and metal broking is quite of comparatively recent origin. There has been a good deal of talk at different times about mines smelting their own tin, and we are glad to hear that there is at length a prospect of this piece of reform being introduced. Tin ore is not like copper, and its reduction to metal is child's play compared with the complicated dressing processes which have to be gone through to produce the black tin from the tin stone.

The results of the mine meetings of the week ought to be most encouraging in every way. No finer tribute to Cornish skill and enterprise has ever been paid than the earning of such handsome dividends at the close of a period of such depression. It shows, too, how enormously the efficiency of the appliances and the economy of working must have advanced under the unpleasant but not altogether unwholesome stimulus of hard times. First, South Condurrow led the way with a dividend of 10s., then came East Pool with a dividend of 4s., and next South Frances follows with one of 12s. 6d. Altogether a very excellent week's work. We are glad to see that the little difficulties which cropped up at the previous account at East Pool are now amicably settled, and that there is likely to be no recurrence. The adventurers have determined upon asking for a reduction in the dues, which at present stand at a 15th and an 18th, and are certainly out of proportion, seeing that in the last quarter the lord had about 500*l.* to the shareholders 1200*l.* In no mine has greater skill to be exercised in dressing than in East Pool, and this of itself is a claim to consideration. As to South Frances, that a profit of 5437*l.* should be made in 16 weeks is really beyond expectation, and shows that this mine (like South Condurrow, with its valuable extension of sett) has a capital future. It puts the dues case of East Pool in a stronger light, when we see that South Frances in a profit of nearly 5500*l.* paid but 536*l.*—a 15th on the profit, as compared with East Pool's 2-5ths. We have always advocated that dues (regarding them as distinct from rent and compensation of surface damage) should be levied on profits, and in that case what lord would think of asking 2*l.* out of every 5*l.* that the adventurers realise? Certainly not Mr. Basset, and very few else if a really earnest attempt were made to put this matter on an equitable and self-regulating basis.

As regards the views expressed recently with regard to the Cost-book System as compared with Limited Liability for mining, we may quote the remarks of Mr. R. Boyns at the start of St. Just United Mines. In responding to the toast of his health he expressed himself very confident that their efforts would be crowned with success, and added that the mine ought never to have been stopped at all. It was worked by a London company, and he considered this was a mistake. He had a very strong opinion that no Cornish mine should be worked by London directors, or on the Limited Liability Principle, and he believed if St. Just Amalgamated had been a cost-book mine it would have been working to this day. Opinions will, of course, differ with regard to part, at least, of this opinion; but it is a fact that very few mines have had any adequate measure of success that have been entirely worked under directions from a distance. Local knowledge and local authority appear almost indispensable conditions to continuous success, though where shares are largely held out of the county it is desirable that due provision should be made for looking after the interests of distant adventurers. The question of Cost-book *v.* Limited Liability may, however, be regarded as settled, at least as a general principle.

So far as St. Just United is concerned, it is regarded as quite outside the range of mere speculation. There will be no difficulty in obtaining all the capital that is wanted, and no chance of the mines coming again to a premature end for want of money. It is expected that in six months from this time the water will be out, and in the meantime the necessary machinery, including stamps, winding-engine, and so on, will be in their places ready for the work which they will have to do. The re-starting of these mines will prove of importance not only to the adventurers themselves but to the neighbourhood as well, as it will give employment to a very large amount of labour in a district in which it has long been sadly wanted.

We have had the other half of the strike at Devon Consols. The former dispute was with the eastern men. Last Saturday was the setting-day of the western part of the sett, and the men were offered their contracts in the customary form of being subject to the general rules and conditions of the mines. They then enquired whether these conditions included their working on the Monday after survey, or on what is usually called "Maze Monday." Capt. Isaac Richards, the manager, informed them that this was the case, and on his calling out each bargain they all abstained from taking, and although he told them that they might as well take their contract, they refused to do so, and quietly left the mine. At Wheal Crebor Mine, too, on the same day Capt. Andrews, the agent, informed the miners that there would not be any more "Maze Mondays" allowed, and that they must, therefore, begin to work on Monday. This, however, the men objected to. As we said on the occasion of the former dispute, we have no sympathy whatever with "Maze Monday" being made the object of a strike. Men have no right to complain that wages are low when they waste the time in which they might make them better. Since the last dispute, however, a feeling is gaining ground that the rate of pay is inadequate under any conditions, and if this is so (it is not easy to arrive at the exact fact) the future of Devon Consols does not seem too promising. If it cannot pay now it must be in poor circumstances, and if it can the management are certainly wanting in discretion. We shall see.

As to the strike itself it is simply ridiculous. The men stopped out Monday, and then went to work on Tuesday, having practically carried their point. They announce their intention of doing this every setting, under the idea that in this style they can have their own way and laugh at the directors. But this sort of thing cannot go on. Either the board will have to abandon the attempt, or the next thing will be a lock-out, and in that, if there is nothing more than the Maze Monday in dispute, the directors will be justified. Men who take such a step as a strike to insist on the right to be idle are beyond the pale of sympathy altogether.

## REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

*April* 24.—The manufacturing coal trade of South Staffordshire as regards the demand is in pretty much the same state as has been the case for a month past. The immediate prospects of the furnace coal proprietors are this week a little better, but the same feature cannot be reported as to the forge coalowners. Expectation is beginning to be manifested in one or two quarters that before very long a reduction may be declared in the existing quotations, for it is intimated now that miners' wages in the Cannock Chase district are reduced the masters in the district were manufacturing fuel is mined will be agitating for a like drop as to the colliers to whom they themselves give employment. At present official rates are not those upon which sales are booked, and the benefit which would result to consumers should a declared drop take place would not probably be large. The Cannock Chase colliery proprietors announce a reduction this week of 1s. 6d. per ton in "deep" coal, 1s. in "shallow" coal, and as to some qualities of slack 6d. The drawing on of the warmer weather, and the drop in wages, account for this action. All goes smoothly touching the raising of funds by certain of the Mines Drainage Commissioners, whereby to obviate the necessity of stopping the pumps in the Tipton district, and this circumstance is a bright side of current business. The Cannock Chase Mines have at a large meeting accepted Mr. Chamberlain's award, and passed a vote of thanks to that gentlemen for his services. Respecting the pig-iron trade, it is satisfactory that Messrs. J. and T. Williams at Parkfield, and the New British Company at Corngreaves, are each re-lighting one of their furnaces. Stocks in the district remain heavy, and it is computed that they show an increase of 10 per cent. as compared with the opening of the year. Prices of native pigs are this week decidedly firmer in sympathy with the Cleveland market, and some makers refuse to book orders upon terms which a fortnight ago they were prepared to accept: 2*l.* 5s. per ton short weight is the quotation for best all mine Shropshire and Staffordshire hot-blast pigs, and 4*l.* 5s. for cold-blast sorts. Part mine pigs are 2*l.* 10s., and cinder pigs about 2*l.* More activity has been noticeable at the finished ironworks this week than last, consequent upon the termination of the Easter holidays. The orders that have accumulated during the suspension of operations have not been heavy, but they are such as will keep the mills going for some little time. In Wolverhampton yesterday, and in Birmidgham to-day, agents of Cleveland firms asked an advance upon two weeks back of 5s. a ton, and the vendors of hematites pursued a similiar course.

The chief features this week upon the local stock exchanges as to properties represented by the *Mining Journal* is an unusual activity in the shares of the Pelsall Coal and Iron Company. These 20*l.* shares (17*l.* 10s. paid) have sold freely at 11 dis., and holders now quote 10¾ dis., with buyers offering 11¼ dis. The shares of the Hamstead Colliery are priced by holders at 11 dis., but buyers demand a further 2*l.* off. The original issue of the Sandwell Park Colliery Company's shares are priced by buyers at 3 prem., but sellers demand 3½ prem. The new issue of the same concern stands at 3 prem., as holder's quotation, and at 2¾ prem. as buyer's price: 2*l.* is offered for the 10*l.* shares of the Chillington Iron Company. The 15*l.* shares (12*l.* paid) of Hopkins, Gilkes and Co. are quoted in this district at 11¼ dis. by sellers. The new issue of Muntz's Metal Company shareholders have sold at 1⅛ prem. The Patent Nut and Bolt Company's property has changed hands this week at 4½ prem., but the shares of the Patent Shaft and Axletree Company have been done at 5 dis. Buyers of the Staffordshire Wheel and Axle Company quote 1½ dis.

Business in the Iron and Coal trades of North Staffordshire keeps depressed. This week matters have assumed a most unsatisfactory appearance consequent upon the official liquidator of the Chatterly Iron Company (Limited) having given a fortnight's notice to shut down their ironstone mines because stocks are very heavy. Several hundred men will be thrown out of employment.

At the annual meeting to-day in Birmingham of the John Bagnall Company (Limited) the report, showing a loss of over 12,000*l.*, was adopted. This, it was stated, brought the total loss since the company's formation up to 164,000*l.* Several shareholders advocated the winding-up of the concern, and Mr. Armitage moved a resolution to that effect, but the Chairman declined to put it, as no notice had been given.

The creditors of Messrs. Harrison and Son, ironmasters, of Walsall, to-day refused the debtors' offer of 3s. 6d. in 1*l.*

## TRADE OF THE TYNE AND WEAR.

*April* 23.—The collieries in Northumberland are now fully employed; of course the strike in Durham has materially assisted to bring about this state of matters. House and small coals are becoming scarce, and are increasing in value. Small coal on the Tyne is now 7s. per ton, and house coal from 12s. to 13s. But it must be observed that several of the first-class collieries do not quote a price or name a term. The strike in Durham continues, and at present there is no prospect whatever of its close, but rather it may be expected to extend until it includes all the coal works in the county. As we stated last week, about 30 collieries are at work in Durham, and the miners have now decided by a vote almost unanimous that these works are to be closed also, that is the men at work at those mines where no reduction has been asked for will be asked to come out. The dispute may no doubt be considered as something beyond an ordinary trade dispute, the leaders denounce in strong language the conduct of the masters, and assert in most positive terms that they have no right to take one fraction from the earnings of the men without their consent, which is of course true, and the masters have given due notice to the men of certain proposed reductions, which the men are at liberty to reject or accept. But the masters are now placed in a bad position, as the men still occupy the houses, and they cannot employ other hands, indeed the men say positively that other hands shall not start, and as they are located in considerable numbers they are in a position to deter any other men from working, and this they are doing, and in fact mob-law is for the time certainly established. Hands are employed in filling from the stocks, and policemen have been employed to protect those hands, otherwise this work could not have been accomplished. There are at present not less than 30,000 men out on strike, and the strike men are clamouring for the stoppage of the collieries now at work. Should this occur, it will add at least 5000 to the number; add to this the ironworkers, iron ore miners, &c., engine-drivers, men employed in steamers employed in this trade, and others, and it is supposed that the strike hands will number altogether 60,000*l.* What is required now in Durham is a regulation as to the hours to be worked on the face, and a nominal wage for such hours also require to be fixed. The masters, we believe, are inclined to propose seven hours work on the face, and 4s. per day for such work, but the men will not agree to this, but might possibly accept six hours work on the face at 4s. per day. It must be noticed that at present the masters Association is in a state of chaos; a considerable number of them are not members of the Coalowners' Association, and if the miners' Union had fallen to pieces the masters' Union would also have been dissolved, but instead of this we have the men's Union re-formed, and certainly nearly as solid as at any former period, and if this continues the men will certainly have to be treated as a mass through the officials of the Union, and it appears to be a disadvantage if the masters are not represented in a similar manner. Further, it is evident that the men will not now agree to a reduction without arbitration, and this difficulty may easily be got over by making (say) a reduction of 7½ per cent., subject to the award of arbitrators who might be appointed immediately. There is no doubt that a larger sum than that named would be awarded by arbitrators, so that if the owners were to adopt such a course they would be perfectly safe in doing so.

A new branch of the steel trade is to be commenced here, a firm

having received orders for a quantity of steel angles, the first order of the kind. Those angles of course will be suitable either for bridge building or shipbuilding.

As might be expected, the traffic on the North-Eastern Railway has fallen heavily. The traffic return just published shows that for the week ending April 19, compared with the corresponding week last year, the decrease in the mineral traffic amounted to about 12,964*l.*

The market at Middlesborough, on Tuesday, was well attended, there being a larger company than usual, owing to the excitement prevailing because of the pitmen's strike. Business is very unsettled, and the prices of iron are being rapidly advanced by makers, who ask 40*s.* for No. 3, and 41*s.* for special brands, No. 4 forge being about 2*s.* 6*d.* to 3*s.* less. Buyers, however, are scarce, and offer about 1*s.* 6*d.* to 2*s.* less than the figures asked by the makers. Ships are waiting for iron in the River Tees. There have been a number of furnaces damped down already, including some of Bolckow, Vaughan, and Co.'s, Messrs. Samuelson's, Messrs. Cochrane's, and those of the Consett Iron Company. The make of pig-iron has, therefore, already been very considerably reduced, and the reduction will be continued every day during which the strike will last, as stocks of fuel will be giving out. The finished ironworks and foundries are in some cases almost brought to a stand, though some have coals which will last for a week or more. The local consumption of pig-metal has, therefore, been as yet not very materially reduced, but that condition of things will not long be maintained. Shipments have been rather less during the past week. Only about half the usual quantity was forwarded to Scotland, and the Scotch consumers are likely to take still less of Cleveland iron should the prices of the latter advance to any material extent. Trade is altogether thrown out of joint by the strike. Orders for finished iron are checked. There is scarcely any alteration in manufacturers' prices. Ship-plates continue to be quoted from 4*l.* 15*s.* to 5*l.*; angles, 4*l.* 17*s.* 6*d.*; and common bars, 4*l.* 15*s.*, less 2½ per cent.

## REPORT FROM DERBYSHIRE AND YORKSHIRE.

*April* 25.—Lead mining appears to have undergone no material change since last notice, and, indeed, it may be said to be in the same state for a long time, for investors seem very chary in being connected with Derbyshire mines, whilst, with two or three local exceptions, residents keep aloof. It may be that past experience has had something to do with this, for most ventures have turned out the reverse of good, as many Sheffield tradesmen know to their cost. For a different reason the working of ironstone mines has fallen off of late years, as it can be purchased from places at a distance as low as it can be produced at home, even after paying the carriage rate by railway. But the coal mines are altogether different, for there appears even now no lack of capital for opening out coal fields, so that Derbyshire has made greater progress in the development of its fuel resources than any other county in England. But of late there was a falling off in the demand, whilst prices were exceptionally low, but the action taken by the Durham miners has been the means of greatly improving the trade during the last ten days, so that a large tonnage has been forwarded from Clay Cross and other places to the Metropolis, which even when the dispute is over will have the effect of causing a larger consumption of inland coal than was the case before. To other parts of the kingdom as well there has also been more doing, and this has resulted in the notices given to the men for a reduction of wages being withdrawn. But somehow or another the demaud has not been followed by any material advance in the prices at the pits. In London the scarcity of the so-called Wallsend has led to their rising to 30*s.*, whilst the best inland coal is but 25*s.* per ton, although the difference between the two, if there is any difference at all as regards real value, cannot be more than from 1*s.* to 2*s.* at most. But people appear to have become so wedded to the North Country coal that they think it has qualities peculiar to itself of a valuable character, although practical men know to the contrary, for the Silkstone coal pure for household purposes cannot be excelled. Steam coal is still quiet, but there is no doubt that before long there will be an improvement, although it is to be feared that the very low price it has been at during the winter and up to the present time will not be materially increased. The make of Derbyshire pig has not materially increased, nor is it likely to do, seeing that the present production, limited as it is, it is more than sufficient for all requirements, for at several of the works there are heavy stocks to be seen. In finished iron there is the same quietness in almost every branch, and there are certainly no signs whatever of improvement. Several of the foundries manage to keep their hands fairly employed in ordinary castings, and that is about as much as can be said up to the present time.

Business is looking rather better in Sheffield, and at several of the works the men are doing more than since the commencement of the year. There has been a fair output of pig, but it does not go off very well, as large stocks are seen on nearly all sides, whilst prices are very low, hematites being offered as low as 42*s.*, delivered in the West Riding. Still the consumption of hematite is large, for the demand for Bessemer rails is brisk, and quite lately some heavy contracts have been booked, the price, no doubt, having something to do with their coming to Sheffield. It would appear as if shipbuilding on the Clyde was becoming brisker, for orders for plates are coming from there, whilst there is also a moderate trade being done in those for boiler making. For some descriptions of steel plates there has been a rather better enquiry, more especially for certain and special qualities. Sheep shears have been in fair request for the colonies and South America, and some orders have also been received from Australia and other places for large knives, as well as general steel goods. Makers of malleable material have been working steadily, for castings of malleable iron are now being turned out so fine as to be equal in every way to articles made of steel. Some of the cutlery houses manage to keep their men well going, the home markets being the best customers for the best qualities of table cutlery in particular.

Some beautiful specimens of Sheffield high-class goods have during the week been forwarded to London for the exhibition of cutlery that commences there in May. Amongst them have been some exquisitely wrought scissors, with designs that will be found sufficient to stamp the superiority of our Sheffield manufacturers over all others. In the Rotherham district the brassworks are very quiet, whilst makers of Bessemer rails are still in full activity, but the engine and mechanics' shops are still dull. At several of the collieries in South Yorkshire a steady trade continues to be done, and there is no doubt but what the strike in the North will be the means of finding more work for our miners than would otherwise be the case; but there is not much likelihood of it lasting long, but the longer the better for the men engaged at the inland collieries. A full average tonnage of house coal has been forwarded to London during the week so far, as well as to other places *en route*. No material change has taken place with respect to steam coal, but the tide appears to be turning, as the busy season will soon commence.

It is expected that the umpire's award with respect to the 12½ per cent. reduction of wages will be made known in the course of a few days. It will affect several thousand miners in South Yorkshire and North Derbyshire.

On Tuesday, at Manchester, the Stanhope Silkstone Colliery, which three or four years ago was sold for 50,000*l.*, was put up for sale by auction and withdrawn after 17,000*l.* had been bid for it.

The absurd notion of adjusting the relations between the coalmasters and their men by a "national holiday" for the miners is revived by a circular which has been addressed to the Trade Unions. A month or six weeks is the suggested period of idleness. The impossibility of getting all the colliers of the kingdom into the same way of thinking will, no doubt, be sufficiently evident at the Conference which is to be held next month to discuss the proposal. But, to assume unanimity arrived at, how would the strikers be maintained during their holiday? Their Union officials will readily admit that their funds would not bear such a strain, and they could hardly expect assistance from other classes of workmen whose means of earning a livelihood might be imperilled by the carrying out of the holiday whim. It might also be well to remind the projectors of the scheme that England is not the only country which produces coal and colliers.

## REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

*April* 24.—No more bodies have been extricated from the Dinas Pit. The enquiry, however, has been resumed before Mr. Reece, coroner, assisted by Mr. Wheelhouse, Q.C., as representing the Home Office. Mr. Thomas Wales, Inspector of Mines for South Wales, was also present. Mr. Simons was retained as advocate on behalf of the colliers. The former manager of the pit—Mr. Chubb, but whose certificate had been suspended at a Board of Trade enquiry held at Cardiff—was examined, and spoke to seeing blowers on several occasions, nothing more serious. On Wednesday the witnesses admitted having seen gas in the pit, and a fireman spoke to seeing a blower in his district on the day of the explosion. Another man, who was injured at the explosion at the Bedwellty Pits, has died, bringing the number of killed up to five. The Clyne Pit, situate between Neath and Resolven, has been flooded, and, of course, work has been suspended in consequence. Pumping operations are going on rapidly. The accident is the more unfortunate as it was expected shortly that the Aberdare Four-feet vein would be reached. The colliery is the property of Mrs. Whitworth, of Northampton.

A meeting of the South Wales Institute of Engineers has been held at Cardiff, Mr. R. Laybourne, M. Inst. C.E., presided. The new papers read were on "Large and small bore-holes," Mr. H. Lewis; "Air friction in colliery pumps," Mr. H. K. Jordan, F.G.S.; and "The pumping plant and machinery erected at Gelligaer Colliery, 1869-71," Mr. G. F. Adams.

At Newport, the firebrick works, together with the house coal colliery and fire-clay level, situate at Cwmfrwdoer, near Pontypool, has been offered for auction. It belongs to the Pontypool Firebrick and Coal Company (Limited). There was no bidder.

Mr. H. F. Brittan, of Bristol, already one of the directors of the Taff Vale Railway, is announced as having been elected Chairman, in place of the late Mr. John Perry.

The new National Bank of Wales (Limited) has far exceeded the anticipations formed of it, favourable though they were. Out of the 562 shareholders already enrolled, more than 200 are from the South Wales district. The allotment of shares takes place next Tuesday at the chief offices at Manchester.

The iron trade, as usual, presents but few indications of a satisfactory nature, although from one or two of the establishments the news comes of a little more work being in hand. Still, iron orders are scarce, and it is impossible to deny this, as well as prices at their lowest. So far as the news from Cleveland is concerned, it can only be said that at two or three of the local establishments preparations are making for an increased production. Some fair orders have been received, and it is only regretable that rates are so low. The demand for bar-iron continues quiet. Clearances during the last few days have been mainly to Maryborough, Stockholm, Varna, and New York.

The Tin-Plate industry is comparatively unchanged, but the enquiry is stated to have a little improved. The strike at Messrs. Booker and Co.'s (Limited) works at Melingriffith is at last stated to be virtually at an end.

The Coal Trade has been brisker during the last few days; a fact which is no doubt attributable to the Durham strike to some extent. Be that as it may, some fine vessels have been loaded or have arrived at the various ports of the district, and shipments have been going on vigorously. The demand for steam qualities is fairly brisk, but no change can be reported in house qualities. Prices, although rather firmer, are unaltered. The Mediterranean and French ports take about the average quantity of coal. Patent fuel shipments have to some extent dropped off, and this department is still quiet. The men at the White Rose Colliery, New Tredegar, have struck work against a 10 per cent. reduction. At the Penrhyceiber Colliery, Mountain Ash, the Four-feet vein has been struck in the upcast pit. In the other pit it had already been won. Operations will now be carried on actively. Mr. W. Bevan is the manager.

At the Tylacoch Colliery, Treorky, operations were supended some time ago, there being such numerous faults in the underground workings. Mr. Thomas Jones, proprietor of the Ynishir and Hafod Collieries, who was the original owner, has now undertaken to start working the pit on his own responsibility.

The Gwendraeth Tin-Plate Works will be shortly reopened. They have been closed since March, 1878, during which time they have been greatly enlarged.

Messrs. Morgan and Rowlands, part owners of the Penygraig Coal Company, have struck the 9-ft. vein of steam coal at Penygraig at a depth of 433 yards. The winning of this vein completes their sinking operations, the first pit having been completed last summer. As they have now only to connect the two pits, they will soon be in a position to give employment to a large number of men. The vein which they have now struck measures 7 ft. 6 in. in thickness, and is of excellent quality.

It is with regret we have to announce the death of Mr. WILLIAM VIVIAN, the manager of the Mwyndy Iron Ore Mines, Llantrissant. Mr. Vivian has had the management of some of the most important mining undertakings in the kingdom, and at the meetings of the company with which he was associated it has been usual for the directors to move a special vote of thanks and confidence in their manager, claiming for Capt. Vivian the position of one of the ablest men to whom a mine was ever entrusted. A few years since he intimated to the directors the desirability of securing a new taking, and they wisely entrusted Mr. Vivian with the task of prospecting the country about Llantrissant. After carefully inspecting the district he recommended operations being commenced to the south-west of the Great Western Railway Station, and the result has been the discovery of one of the largest deposits of iron ore in South Wales. As a geologist he also had a great reputation. When the Japanese Ambassadors visited this country to inspect our mines and works they were recommended in London to visit Mr. Vivian, and, it is said, came down almost on purpose to do so.

HEAVY LOSSES IN THE IRON TRADE.—The annual meeting of John Bagnall and Sons (Limited) was held on Thursday at the Queen's Hotel, Birmingham, under the presidency of Mr. E. Gem. The directors reported a loss of 12,693*l.* upon the year's trading. No portion of the 16,500*l.* due from Mr. Albert Grant had been received, and that being the case, the company were now entitled to claim 66,150*l.*, the full amount of the balance of the decree. The reduction of the nominal value of the original shares from 10*l.* to 3*l.*, after providing 64,000*l.* for reducing the book values of the collieries and ironworks, left 48,000*l.* available as a bonus upon the issue of new shares. Of the 48,000 of these shares created only 14,953, however, have been taken up. The report was adopted. A long discussion ensued upon the question of continuing or discontinuing the works. Several shareholders strongly advocated the winding-up of the company. In reply to a question, the Chairman stated that the total losses on the part of the company since its establishment a few years since amounted to about 164,000*l.* Mr. Armitage characterised the reconstruction scheme of last year as extremely indiscreet, remarking that he would rather lose the amount paid up than pay another "call." He was ready to transfer gratis 390 preference B shares (25*s.* paid up) rather than keep them with the risk. He did not believe the shareholders would get a farthing from the company, and he moved "that the directors be instructed to take the necessary steps to wind up the concern in voluntary liquidation." The motion having been seconded, the Chairman, on the advice of the solicitor of the company, declined to put the resolution to the meeting, not having previously received notice of the same. Mr. Armitage intimated that he should consult the other shareholders and take further action in the matter.

SALE OF THE SILKSTONE MAIN COLLIERY.—Mr. Charles Costigan auctioneer, offered for sale, at the Mitre Hotel, Manchester, the Silkstone Main Colliery, together with all the engines, machinery, coke ovens, plant, railways, tramways, horses, carriages, and other materials now in use at the said colliery. The area of land comprised in the lease of the colliery is about 500 acres, and is held for thirty-five years, from Feb. 26, 1869, under a lease granted by the late Mr. John Spencer Stanhope, of Cannon Hall, to George Haworth. There is also a provision in the lease for an extension of three years at the end of the term, without payment of royalties, in order to recoup clear rent, if any, that may have been paid under the lease, for which coal has not been worked. The clear rent is two acres of each seam of coal worked per annum, or equal to about 1000*l.* per annum. The colliery at present can turn out an output of 600 to 700 tons per day from the Silkstone seam alone. The coal is of first-class quality as house and gas coal, and is well known in the London and other markets. The seams comprise the Parkgate, the Flockton, the Bivelley seam, and the Silkstone seam. The colliery is opened out in the most approved manner, is fitted with first class engines and other machinery, capable, if required, of raising 1000 tons per day. The colliery is situated on the Silkstone and Dalton branch of the Lancashire and Yorkshire Railway, and the engines of that and the North-Eastern, Manchester, Sheffield, and Lincolnshire, the Midland, and Great Northern come up the company's sidings. It has also direct communication with all the principal railways in England. It has the advantage of having no less than four main lines to London for the carriage of the coal raised. The colliery was offered for sale in Barnsley about three years ago, and was withdrawn when 48,000*l.* was bid for it; but afterwards an arrangement was come to by the highest bidder, who purchased on behalf of the Stanhope Silkstone Colliery Company (Limited) for the sum of 50,500*l.* It is well known that the company's affairs are in liquidation at the present time. The property was offered by Mr. Costigan, subject to the public sale conditions of the Incorporated Law Society of Liverpool. The deposit was at the rate of 15*l.* per cent. of the purchase-money, and the purchase was to be completed and the balance of the purchase-money paid at the office of Messrs. Haigh and Son, Liverpool, on May 31. Between 130 and 140 persons were present at the sale, among them being Mr. Hartley, managing director of the Silkstone and Dodworth Coal and Iron Company (Limited); Mr. J. Higson, mining engineer, Manchester; Mr. Hawarth; Mr. E. Lancaster, Barnsley; Mr. J. Shepherd, Barnsley, &c. After an address from the auctioneer the first bid for the property was 10,000*l.*, and in a very short time, by advances of 500*l.* at a time, 13,000*l.* was bid. A pause then took place, and the bids then went on, the last was 17,000*l.* No other offer was made, and it was then withdrawn.

## TELEPHONE, MICROPHONE, AND PHONOGRAPH.

We have become so accustomed to regard the process of transmitting sound by electricity as the discovery of the last few years that the assertion of the fact that it was known and practised a quarter of a century ago appears a little startling, yet there is unquestionable evidence in the shape of details published at the time that the principle was known, had been successfully tested, and was described in 1854. In Count du Moncel's admirable little volume on electrophonic transmission, the translation of which* has just issued, the statement published in 1854 has been reproduced. Mr. Preece considers that the earliest document in which the transmission of sound to a distance is distinctly formulated dates from 1667; he refers to a paper by one Robert Hooke, who writes to this effect:—"It is not impossible to hear a whisper at a furlong's distance, it having been already done, and perhaps the nature of the thing would not make it more impossible though that furlong should be ten times multiply'd. And though some famous authors have affirm'd it impossible to hear through the thinnest plate of Muscovy glass; yet I know a way by which 'tis easie enough to hear one speak through a wall a yard thick. It has not yet been thoroughly examin'd how far otacousticons may be improv'd, nor what other wayes there may be of quickning our hearing or conveying sound through other bodies than the air; for that that is not the only medium I can assure the reader that I have by the help of a distended wire propagated the sound to a very considerable distance in an instant, or with as seemingly quick a motion as that of light, at least incomparably quicker than that which at the same time was propagated through the air, and this not only in a straight line or direct, but in one bended in many angles."

It is not difficult to recognise in this description the principle of the string telegraph which has recently been sold as a toy for a few pence, and which, according to some, has long been used in Spain for correspondence between lovers. Although the instrument has become a child's toy it has great scientific importance, for it proves that vibrations capable of reproducing speech may be extremely minute, since they can be mechanically transmitted more than 100 yards. From the telegraphic point of view, however, the problem of transmitting sounds to a distance was far from being solved in this way, and the idea of applying electricity to this mode of transmission naturally arose as soon as the wonderful effects of electric telegraphy were observed—that is in years subsequent to 1839. The American discovery by Page in 1837 that a magnetic bar could emit sounds when rapidly magnetised and demagnetised, and that these sounds corresponded with the number of currents which produced them, and the electric vibrators devised by Messrs. Macaulay, Wagner, Neef, and others, and adapted to produce musical sounds between 1847-1852 by Messrs. Froment and Pétrina, showed that the problem of transmitting sounds to a distance was not insoluble. Yet up to 1854 no one had ventured to admit the possibility of transmitting speech by electricity, and when Mr. Charles Bourseul published in that year a paper on the electric transmission of speech the idea was regarded as a fanciful dream. Count du Moncel confesses that he himself thought it incredible, and when he produced the paper in the first edition of his account of the applications of electricity, published in 1854, he felt bound to add that the scheme seemed more than doubtful. Yet as the paper was thoughtfully written, he had no hesitation in publishing it, affixing the signature of Ch. B. Events justified this daring idea, and although it did not include the only principle which could lead to the reproduction of articulate sounds, yet it was the germ of the fertile invention which has made the names of Graham, Bell, and Elisha Gray famous. In Mr. Charles Bourseul's paper, which is republished *in extenso* in the present volume, he says, after asking whether what is spoken at Vienna may not be heard at Paris—"The thing is practical in this way. We know that sounds are made by vibration, and are adapted to the ear by the same vibrations which are reproduced by the intervening medium. But the intensity of the vibrations diminishes very rapidly with the distance. . . . . Suppose that a man speaks near a moveable disc sufficiently flexible to lose none of the vibrations of the voice, that this disc alternately makes and breaks the currents from a battery, you may have at a distance another disc which will simultaneously execute the same vibrations. It is true that the intensity of the sounds produced will be variable at the point of departure at which the disc vibrates by means of the voice, and constant at the point of arrival where it vibrates by means of electricity; but it has been shown that this does not change the sounds. It is moreover evident that the sounds will be reproduced at the same pitch. The present state of acoustic science does not permit us to declare *a priori* whether this will be precisely the case with syllables uttered by the human voice. The mode in which these syllables are produced has not yet been sufficiently investigated. . . . . However this may be, observe that the syllables can only reproduce on the sense of hearing the vibrations of the intervening medium; reproduce precisely these vibrations and you will reproduce precisely these syllables. . . . . It need not be said that numerous applications of the highest importance will immediately arise from the transmission of speech by electricity. Any one who is not deaf and dumb may use this mode of transmission, which would require no apparatus except an electric battery, two vibrating discs, and a wire. In many cases, as for example in large establishments, orders might be transmitted in this way, although transmission by electricity will not be used, while it is necessary to go from letter to letter and to make use of telegraphs which require use and apprenticeship. However this may be, it is certain that in a more or less distant future speech will be transmitted by electricity. I have made some experiments in this direction; they are delicate, and demand time and patience, but the approximations obtained promise a favourable result."

The relative claims of Messrs. Elisha Gray, Graham Bell, Manzetti of Aosta, Camack, Dolbear, and others, are fully and fairly discussed; and there are excellent descriptions of Reiss's telephone, and the modifications of it by Heisler, Vander Weyde, Wray, Pétrina, and others; as also of Pollard and Garnier's singing condenser. In treating of speaking telephones the author first describes string telephones, Bell's electric telephone, and Gray's share in the invention of the telephone, and then explains the fundamental principles of the Bell telephone, and the ordinary arrangement of it. There are then chapters on battery telephones, modifications of Bell telephones, with a full record of the scientific experiments that have been made. The microphone and its applications are then dealt with, and the author then discusses the questions of external influence on the telephonic transmissions, the establishment of telephone stations, the application and uses of the telephone and the phonograph and its uses, concluding with a most interesting notice of Mr. Faber's speaking machine, which was exhibited at the Grand Hotel some two years since. The volume contains an enormous amount of information, and the details are so carefully given that

* "The Telephone, the Microphone, and the Phonograph." By Count DU MONCEL, Membre de l'Institut. Authorised translation, with addition and corrections by the author. London: C. Kegan Paul and Co., Paternoster square.

they will be of real practical use to all having any acquaintance with electricity, although they are sufficiently free from technicalities to suit the taste of the general reader.

## THE WEEK.

SATURDAY, APRIL 19.—The American market continues very animated, and sellers at even the top prices a few days ago find themselves now left far behind. Erie Second Mortgage have reached 73, the shares $27, and the First Mortgage 108½. The Funded Fives are now 75. Philadelphia and Reading General Mortgage have reached 56. A further advance in Atlantic and Great Western Mortgage bonds and in Pennsylvania shares is far from improbable. The shares in the United States Rolling Stock Company, called for brevity "Rollers," have also largely benefited, and are now close upon 15*l*. Richmond, 8⅞ to 9½; Eberhardt, 4 to 4¼; Port Phillip, 9s. to 11s.; New Quebrada, 1⅞ to 2⅛; Van, 19¼ to 20½; Roman Gravels, 8¼ to 8¾.

MONDAY.—High as Consols are already they advanced ¾ further in the course of the day, closing at 99¼. It is generally expected now that par will be reached, a state of things that has not been seen for more than 25 years. But for this fillip the other markets would have been dull, as it is clearly apparent that speculators in several railway stocks have not been followed by the public, and may be left high and dry any day. Chatham Preference was exceptionally strong, and reached 95. Erie Seconds bounded from 73 to 75.

TUESDAY.—The directors of the Santa Barbara Gold Mining Company are enabled to declare a dividend of 1s. 6d. per share, making 2s. 6d. for the year, and to add 500*l*. to the reserve fund. The shares being 10s. each, and fully-paid, the rate of dividend is consequently just 25 per cent. Consols touched 99⅝. American shares lost ground; Erie Second after being 75 in the morning receded to 73½, and the shares fell ⅝ ($27½ to $27⅜); Atlantic and Great Western First Mortgage receded to 8¼; Philadelphia and Reading, 74; Mortgage, however, managed to maintain the price of 56; and United States Rolling Stock rose 10s., to 15¾.

WEDNESDAY.—The high price reached by Consols, being the highest since 1853, brought in sellers, and the stock fell to 99. Erie seconds recovered to 74. Philadelphia and Reading General Mortgage was a flat market, and the bonds receded to 54. There was a sharp decline in the railway market, Brighton, A, fell 1¾, to 115; and Dover, A, 1, to 114¼. Egyptian Preference, 63¼ to 63¾; Unified, 45¾ to 46; Turkish Fives, 11¼ to 11⅝. Richmond, 8⅞ to 9¼; Don Pedro, 14s. to 16s.; Colorado 2 to 2¼; Sierra Buttes, 2⅛ to 2⅜.

THURSDAY.—An extraordinary fall took place in Bolivian Bonds. A transaction was marked early at 27*l*., and the next one was at 20*l*. The decision in the law courts was adverse to those who deposited their bonds and joined in the scheme for getting out the money locked up in the Bank of England. If the money is to be fritted away in Bolivia on the construction of the railway, even 20*l*. is considered to be too high a value to be placed on the bonds. Chilian were adversely affected by a statement that the sinking fund is to be suspended.

FRIDAY (*Opening*).—Home railways are inclined to be firm. Brighton (A) closed at 115⅛ last night; buyers now bid 115½. Great Eastern are 57. Turks show no change, and Ottoman Bank shares are offered at 10. Erie Seconds are 75½; Eberhardt, 4¼ to 4½; Richmond 8¼ to 9; East Van, 1⅝ to 1⅞; Don Pedro, 14s. to 16s.; Port Phillip, 9s. to 11s.; Cape Copper, 28 to 29; Plumas Eureka, 3 to 3¼; Frontino, 2⅛ to 2⅜; South Condurrow, 11¾ to 12¼.—*Two o'clock.*—A large business is being done in Bolivian Bonds, which have fallen further, and have been dealt in at all prices, from 18 to 20¾. Chilian are again lower. North-Eastern is a firm market, and 1¼ up. Brighton (A) have been down to 114¾, but are now 115⅛ to 115⅜; Unified, 45½ to 45¾; Preference, 63 to 63¼; Turks, 11¼ to 11⅛; Richmond, 8¾ to 8⅞; "Rollers," 15⅝ to 15¾; Reading shares, 15⅛ to 17.—*Four o'clock.*—During the last hour prices have given way all round, and closed at nearly the lowest. Brighton only 114; Turks, 11¼; Egyptian Preference, 62½ to 62¾; Richmond, 8⅝ to 8¾; Newport Abercarn Colliery, 4 to 5; Bilson and Crump, 2 to 3; Chapel House, 1 to 1½; Cardiff and Swansea, ¾ to 1¼.

FERDINAND R. KIRK.

GENERAL MARKETS.—Our markets are not very brisk, and prices to day do not show much change from last week. The great feature in the markets has been the extraordinary price of Consols, at one time touching 99⅝; this, however, is not maintained, owing to realisations, the price to-day being 98¾ to 98⅞. English railways are rather dull, which is hardly to be wondered at, considering the bad weather we have had. Great Eastern are rather lower, but at one time this week were as high as 57⅞ to 57⅞. Brighton, A, have fluctuated a good deal between 117¼ and 114¼. "Chathams" and "North-Easterns" show a nadvance for the week. In the foreign market, Egyptian Stocks keep very steady, the impression being that the Governments of England and France will shortly do something which will improve the present state of affairs. Bolivians have had a very severe drop on account of the verdict in the long standing lawsuit being given against the bondholders. Chili, too, are down; the announcement of the suspension of the sinking fund on the foreign debt, although this news has been expected by us for some time, it is feared that Chili will have great difficulty in making both ends meet should the war in which she is now engaged be prolonged. There is not much to notice with regard to other foreign stocks. Argentines have been very good, but are rather lower now, with other South American stocks. Tin mines have been rather dull.—W. H. H. WATSON; 1, *St. Michael's Alley, Cornhill, E.C., April 25.*

## FLAGSTAFF MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—From the reliable information you obtain in all mining matters, and from the evidently careful enquiries you make, I feel quite sure your Editorial would not have communicated to the public that the secretary of the company had resigned had there not been some valid basis for such an announcement. I was, therefore, somewhat surprised on reading Mr. De Metz's letter in the Journal of the 12th inst., which, while not denying the statement, yet would lead a casual reader to infer that he did not now contemplate a severance from the company. I find, however, on personal enquiry that Mr. De Metz has placed his resignation in the hands of the board, and that his official duties will terminate at the expiration of three months, his terms of engagement requiring that period of notice. There has been no annual general meeting of the shareholders for 1878, and the time appointed by the Articles of Association has again, for 1879, arrived, and still there appears no intention on the part of the board to convene a meeting. Your advice, Sir, to the company to get wound-up is the only sound conclusion those who have studied the inner workings of the board, and who know the property is now in the possession of other parties, can arrive at, and the sooner they submit to what may appear a cruel stroke of fate the sooner will they be in a position to take advantage of the proposals which have been made for the formation of a new company, and I happen to know that such a thing can be done; the true friends of the shareholders are but too anxious for their co-operation. I repeat that the first step towards this end is the calling together of the shareholders at the general meeting, when the soundness of the course recommended will be made manifest. The directors have no control over the property, and are powerless to help the shareholders, save by the simple discharge of their duty of calling a meeting.

LUX.

MINE EXPLOSIVES.—What a change has taken place in the matter of mining explosives during the last few years? Formerly it was "Gunpowder from Kennall Gunpowder Mill" all over the mines in the county, and from scarcely anywhere else; but competition, and a keen one too, in the gunpowder trade has sprung up for many years past. Now we have "dynamite," and "tonite," and "lithofracteur," and "Nobel's explosives," and many others for what we know. At South Frances meeting, on Tuesday, 2500 lbs. of No. 1 dynamite were supplied for 250*l*., at 2s., and treble detonators at 25s. These were all subject to 7½ per cent. dis. Lithofracteur was bought at 2s. per 100 lbs., with 12½ per cent. dis.

CARN BREA MINES—WARS AND RUMOURS OF WARS.—These shares were depressed a few days since from rumours in circulation that the adventurers were likely to be involved in a series of lawsuits, London and other lawyers being already on the scene of action. The dispute, we understand, however, is not likely to be a serious one, but one easy of adjustment. It arose from Major Beaumont, the patentee and contractor for the use of his drilling machine at Carn Brea, imagining that justice had not been done to him by the manager of the mines (Capt. Teague). Capt. Teague, however, in the interest of the adventurers, insisted that Major Beaumont should carry out his contract, not merely in driving the ends, but in sinking the shaft also. Capt. Teague was quite ready to pay all the money due, for which the action was brought, but only as in final settlement of all claims by Major Beaumont, and it is said a cross-action against Major Beaumont has been commenced for delays, &c. We are glad now to learn the matters in dispute are likely to be settled in a friendly way by arbitration. Mr. Brewer, of London (Rose, Norton, and Brewer), has been acting as solicitor for Major Beaumont, and Mr. Marrack, of Truro, for Carn Brea adventurers. Mr. Montagu Bere, the County Court judge, has undertaken to settle the dispute by an award under his hand.—*West Briton.*

The following reports were received too late for insertion in their proper place

TYN-Y-FRON.—E. Jones, April 23: I am quite satisfied now about the lodes in the eastern drivage. What we had when the hard ground came in was no doubt the south lode, but it was so weak that I thought it was a branch or leader running from the middle branch to that lode, and after driving about 5 fathoms we found several other branches running 24° north of east; therefore, as our main lode runs 25° south of east it is clear the great lode is divided into three, and is disordered by these cross branches. In consequence of the bend of the hill the ground above this point is very shallow, and consequently disordered; therefore, I have discontinued it, considering it more advisable to extend the 12 fm. level from the winze eastward, where we shall have settled ground. We have commenced cutting the ground for the slides, picking floors, &c., which we shall continue as the weather permits; when prevented by rain we shall go underground and rise from top of winze to make shaft to surface. We are raising stone for the little building, and hope to have the masons from the Temple on Monday.


**In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.**

IN the MATTER of the COMPANIES ACT, 1862, and of the EAST WHEAL GRENVILLE MINING COMPANY.—By direction of the Registrar of the said Court, TENDERS will be received by the Official Liquidator of the said company, at the Stannaries Court Office, in Truro, in the county of Cornwall, on or before the 3rd day of May next, stating the highest price which will be given for the whole, or any portion, of the undermentioned

MACHINERY AND MATERIALS,

Now being at the EAST WHEAL GRENVILLE MINE, in the parish of Camborne, within the said Stannaries, and belonging to the said company—viz., ONE 60 inch cylinder PUMPING ENGINE, 9 by 8 ft. stroke: ONE 10 ton BOILER, with FITTINGS; parts of a HORSE WHIM and CAPSTAN, with 50 fathoms of WIRE ROPE,

To inspect the above apply to the bailiff in charge at the said mine, and for further particulars to Mr. CHARLES WILLIAM CLINTON, the said Official Liquidator, at the Stannaries Court Office, Truro.

HODGE, HOCKIN, AND MARRACK, Truro
(Solicitors for the Official Liquidator).

Dated Stannaries Court Office, Truro, April 21, 1879.

EAST DOWN, DEVON.

MESSRS. GOULD AND SANDERS WILL SELL, BY AUCTION, at the Golden Lion Hotel, Barnstaple, on Friday, 2nd May, 1879, at Four o'clock in the afternoon, the following

FREEHOLD PROPERTIES:—

LOT 1.—All that Residential Estate, known as HIGHER VIVEHAM, East Down, Devon, containing 183 A. 1 R. 26 P., or thereabouts, and now and for some years in the occupation of Mr. John Sanders. The Estate is situated within 3½ miles of Barnstaple. It comprises a capital Dwelling-house, with all necessary Outbuildings. Valuable seams of Manganese and Iron Ore run under the property.

LOT 2.—All that Estate, known by the name of LOWER VIVEHAM, in East Down aforesaid, containing, together with valuable Woods and Plantations thereto belonging, 100 A., or thereabouts. Valuable lodes of Manganese and Iron Ore run under the Estate, and a lease has been granted of iron lodes (under about 50 acres) of this property, for a term of 21 years.

For further particulars, apply to the Auctioneers; to Messrs. CROSSE and DAY, Solicitors, Southmolton; or to Messrs. CHANTER, FFINCH, and CHANTER, solicitors, Barnstaple.

BY ORDER OF THE MORTGAGEES.

MESSRS. BRANCH AND LEETE WILL SELL, BY AUCTION, on Tuesday, 6th May next, at Three o'clock in the afternoon precisely, at the Law Association Rooms, Cook-street, Liverpool, subject to conditions to be then produced, and which may be seen at the office of the vendors' solicitors seven days before the sale, ALL THAT VALUABLE SLATE QUARRY, known as the

CLANWILLIAM SLATE QUARRY,

Situate in the Barony of Arklow, County Wicklow, Ireland, comprising upwards of THIRTY-FOUR ACRES of LAND, together with the FIXED and MOVABLE MACHINERY, FIXTURES, and PLANT, now in working order.

The quarry and lands are leasehold for an unexpired term of 57 years, and are subject to a rent of £100 per annum, merging into certain royalties.

The slate is pronounced by competent judges to be of the finest quality known for school slates. The roofing slates also are of superior quality, and include green slates.

For further particulars and orders to view the works (which can be inspected at any time), apply to Mr. ASTRUP CARISS, Accountant, 40, Castle-street, Liverpool; or to Messrs. HARVEY, ALSOP, and STEVENS, Solicitors, 12, Castle-street, Liverpool, where the leases may be seen.

PRELIMINARY ANNOUNCEMENT.

IN THE MONTH OF MAY NEXT WILL BE OFFERED FOR SALE, BY AUCTION, in One Lot, as a going concern, the ESTATE and INTEREST of the

STAND LANE COLLIERY COMPANY
(LIMITED),

In the MINES of COAL, SHAFTS, and UNDERGROUND WORKINGS, held by the company of the Earl of Derby, in the township of Pilkington, in the county of Lancaster, together with the

STEAM ENGINES, STEAM BOILERS, TUBS, RAILS, RAILWAY WAGONS, HORSES, CARTS,

And all other the property and effects of the company, incidental to the working of their colliery.

In the meantime all necessary information may be had on application to ADAM MURRAY, Esq., the Liquidator acting in the voluntary winding-up of the company; or to Messrs. T. A. and J. GRUNDY and Co., Solicitors, both of No. 104, King-street, Manchester.

BOWERS' ALLERTON COLLIERIES (LIMITED).

We hope shortly to be in a position to FIX THE DATE for the SALE of the above VALUABLE LEASEHOLD COLLIERIES, and announce the ISSUE of the PARTICULARS and CONDITIONS OF SALE.

HEPPER AND SONS, Auctioneers, Leeds.

FORCE CRAGG LEAD AND BARYTES MINE AND WORKS,
FOR SALE,
Situate at BRAITHWAITE, KESWICK, CUMBERLAND.

TO BE SOLD (as a going concern), BY PRIVATE TREATY, the above VALUABLE MINE and WORKS. The sett is a very large one, and contains veins of COBALT, MANGANESE, LEAD ORE, and BARYTES. A tramway runs through the sett, and there are two mills driven by water power (one recently erected and fitted up with powerful machinery), for grinding barytes; plant for bleaching barytes; set of stamps and water-wheel for crushing lead ore. The royalty is very low, and the dead rent, only £25 yearly, merging into royalty.

T. RICHARDS, Esq., F.G.S., Bond-street, Redruth, inspected the property on Oct. 4th, 1876, and his report, with any further information required, can be had by applying to J. STRAUGHTON, Main-street, Cockermouth, Cumberland.

FOR SALE, or terms will be made for the working, the celebrated

SABA SULPHUR PROPERTY,
SABA ISLAND, DUTCH WEST INDIES,
IN ALL ABOUT NINE HUNDRED ACRES,
FIVE HUNDRED ACRES FREEHOLD.
FOUR HUNDRED ACRES LEASEHOLD.

The beds of ore are opened on the freehold, known as the Great Hole Estate, in the district of Hell's Gate. The adjoining leaseholds are secured as the beds extend under them, and to prevent competition. The bed opened on is within 600 ft. of the shipping place; it is from 15 to 20 ft. in thickness, and of high quality—viz., from 30 to 70 per cent.—perfectly free from deleterious matter, as arsenic, &c. A face of 200 ft. in length has been exposed, all equally rich, and the ore can be seen cropping out for fully half a mile in length. Nine cargoes shipped to America, as quarried from the cliff, gave results as follows:—

| | | | |
|---|---|---|---|
| Name of vessel—Adair F. Bonny | | Analysis | 44·00 |
| ,, | —Indiana | ,, | 44·00 |
| ,, | —Carrie Nelson | ,, | 57·00 |
| ,, | —John Rose | ,, | 52·00 |
| ,, | —Sarah L. Hall | ,, | 52·25 |
| ,, | —Astra | ,, | 44·00 |
| ,, | —Wylie Smith | ,, | 52·50 |
| ,, | —Annie Gardener | ,, | 50·00 |
| ,, | —Sarah L. Hall (second cargo) | ,, | 50·00 |

The average quality of the ore raised in the richest Sicilian Mines is under 20 per cent.

The Saba property having been in litigation for four years, has prevented its being worked; but the freehold and leasehold rights have been declared by the last Appeal Court at Curaçoa to be the property of—

HENWOOD, MAC NISH, AND CO.,

Who invite full inspection and investigation. Further particulars can be obtained by application to— T. MAC NISH, St. Kitts, W. I.

Saba, West Indies, March 26, 1879,

LAND AND WORKS TO LET, suitable for CHEMICAL WORKS, PAPER WORKS, IRON, TIN, or COPPER WORKS, or any Works producing noxious smoke. Rent moderate.

Coal of every description abundant from 4s. per ton. Good supply of water. Building stones plentiful.

Canal and railway communication with Swansea and Neath Harbour.

Apply to RICHARD HALL and SONS, 37, Great George-street, Westminster; and Mr. THOMAS WILLIAMS, Aberdulais, Neath, Glamorganshire.

TO MINING COMPANIES, &c.

FOR SALE (cheap), SECOND-HAND HORIZONTAL BEAM and PORTABLE ENGINES, all sizes, suitable for Winding or Pumping. CORNISH EGG-ENDED and VERTICAL BOILERS, PUMP LIFTS, T-BOBS and GEARING, PIT-HEAD STOCKS, WIRE ROPES, and every description of PLANT for MINING PURPOSES, ready for immediate delivery.

Price Lists on application to—

EDWARD RATCLIFFE, ENGINEER, HAWARDEN, NEAR CHESTER.

FOR SALE, a NEW 70 inch cylinder CORNISH BEAM PUMPING ENGINE, 10 ft. stroke in cylinder and 9 ft. in the shaft, with steam case, metallic piston, and wrought gudgeon. The false cover, perpendicular pipes, weigh posts, working and nozzle gear all fitted bright. A strong substantial well made engine, complete, including cast-iron casings for top and bottom nozzles with bright covers, holding down bolts and wrought-iron caps and bolts for connection to main rod.

Apply to WILLIAMS'S PERRAN FOUNDRY COMPANY, Perranarworthal, Cornwall.

Dated Jan. 29, 1879.

MONEY LENT, at EIGHT, NINE, and TEN PER CENT., on FIRST MORTGAGE of FREEHOLDS for IMPROVEMENTS and STOCKING, said freeholds in the Province of MANITOBA.

Address, HERBERT C. JONES, Solicitor, 30, Masonic Hall, Toronto.

STORES.

THE CARDIFF AND SWANSEA SMOKELESS STEAM COAL COMPANY (LIMITED).

TENDERS for COLLIERY STORES are INVITED for the ABOVE COMPANY.

Applications for Forms of Tender to be made to—

JOHN DAVIES, Secretary.

6, Great St. Helen's, London, E.C.

CONTRACT FOR PAVING SETS.

THE DUBLIN PORT AND DOCKS BOARD is prepared to RECEIVE TENDERS for the SUPPLY and DELIVERY of about EIGHT HUNDRED AND FIFTY TONS of WELSH PAVING SETS, 7 inches deep, 4 inches wide, and from 7 to 10 inches long. No greater deviation can be allowed in the width of each set than one quarter of an inch on each side, so that any six sets, chosen at will of the Engineer, and set side by side so as to touch each other, shall in no case measure less than 21 inches or more than 27 inches across.

The sets to be delivered on the Dublin Quays, where directed (probably on Great Britain Quay), within three months of date of acceptance of tender.

Tenders, accompanied by a set, intended as an average (not picked) sample of the sets to which the tender refers, shall state the cost per ton, including all charges whatsoever for materials, labour, carriage, and delivery.

The sets shall be of the best quality, squarred carefully, and in every respect subject to the approval of the Engineer of the Board, B. B. Stoney, Esq., Port and Docks Office, North Wall, Dublin, from whom further information (if required) may be obtained.

Payments (first deducting 10 per cent.) will be made in about a fortnight or three weeks after each cargo has been delivered, provided the measurements, materials, and work are to the satisfaction of the Engineer of the Board, and the 10 per cent. retained will be paid along with the payment for the last cargo.

Tenders, incorporating the terms of this advertisement, must be sent through the post, sealed, prepaid, and marked on the outside of the envelope, "Tender for Paving Sets," and addressed to the Secretary, Port and Docks Office, Westmoreland-street, Dublin, on or before Wednesday, the 30th April, 1879.

The Board does not bind itself to accept the lowest or any tender.

By order, N. PROUD, Secretary.

Port and Docks Office, Dublin, April 10th, 1879.

TO CAPITALISTS, MINING ENGINEERS, AND SPECULATORS IN MINING PROPERTY.

AN EXTRAORDINARY OPPORTUNITY of OBTAINING a VALUABLE LEAD MINING PROPERTY in the NORTH OF SPAIN is NOW OFFERED at ONE-TENTH its COST and VALUE. There is a good steam engine, with crushing and dressing machinery on the mines.

A large quantity of lead ore is in sight, and only requires to be stoped away and dressed. A market has recently been opened for it at San Sebastian, where the price is above the English market value. Owing to recent orders the Government road to San Vincente can be used for transport, reducing the cost from 21s. to 8s 4d. per ton. The vendor believes that an outlay of £2000 to £3000 will make this a good paying concern, as besides the lode alluded to above a winze containing very rich ore can be drained, and the ore cut 40 ft. lower down by the gallery which is driven to within 100 yards of it. This will open up the eastern portion of the property, which is rich in lead ore, besides calamine.

Any further information can be procured by applying to the Liquidator, 35, Corn-street, Bristol.

HORIZONTAL ENGINE, 15-horse power, strong, and well-finished, with fly-wheel, wrought crank shaft 5 in. diameter, and massive box bed; suitable for winding or general purposes; quite new. Price £70.

HORIZONTAL ENGINE, 8 in. cylinder, beautiful and most improved design, new and complete, with pump and governor. £38.

ALEXANDER SMITH,
ENGINEER, DUDLEY, WORCESTERSHIRE.

18 H.P. PORTABLE STEAM ENGINE, with link motion, reversing gear, ready for delivery; also gear to wind and pump.

A 9-h.p. VERTICAL STEAM ENGINE, with link motion, reversing gear (winding drum if required).

A 6-ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER, with carriage and travelling wheels.

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22 IN. AIR COMPRESSOR, on massive bed-plate, with slide bars, connecting rods, and crank, FOR SALE (CHEAP).

Improved AIR COMPRESSING ENGINES, with 12 and 9 in. cylinders.

Also PAIR OF 9 inch WINDING ENGINES complete, with 4 feet drum, geared 3 to 1. Apply to—

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MANUFACTURERS also of IRONWORK, WHEELS, and AXLES.

EDMUND FOWLER, Managing Director.

WORKS,—SMETHWICK, BIRMINGHAM.

THE NEW PATENT
WATCHMAN'S DETECTOR CLOCK.

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Geological examinations; reports on mining properties; surveys mines, railroads, and canals, and superintends the workings of the same. Prepares estimates and plans for opening and working mines. Expert on mining questions before the Courts.

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THE HISPANO-ANGLO-BELGE METALLURGICAL SOCIETY,
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Mine Proprietors; Exporters of Antimony, Galena, Tin, Copper, Calamine, Blende, Manganese, Iron, and Manganiferous Iron Ores, Phosphate of Lime, Sulphate of Barytes, Refined Sulphur, &c.; Importers of Colonial Produce, Metals, Chemicals, &c.

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THE NEWCASTLE DAILY CHRONICLE
(EST. PUBLISHED 1764.)

THE DAILY CHRONICLE AND NORTHERN COUNTIES ADVERTISER

Offices, Westgate-road, Newcastle-upon-Tyne; 50, Howard street, North Shields: 195 High street, Sunderland.

## NOBEL'S EXPLOSIVES COMPANY
(LIMITED),
149, WEST GEORGE STREET, GLASGOW,
FORMERLY
THE BRITISH DYNAMITE COMPANY
(LIMITED).

NOTICE IS HEREBY GIVEN, that in the Cause of the BRITISH DYNAMITE COMPANY (LIMITED) and NOBEL'S EXPLOSIVES COMPANY (LIMITED), *versus* FRANCIS KREBS and others, that the Right Honourable the House of Lords have, upon the appeal of the plaintiff companies, reversed the decision of the Court of Appeal below, and upheld the judgment of Mr. Justice FRY, given upon the 15th of June, 1877, whereby he awarded to the plaintiff companies an injunction to restrain the defendant, FRANCIS KREBS and others, during such time as certain Letters Patent of the 7th of May, 1867, should remain in force, from Manufacturing or Selling in this country any Lithofracteur or any compound consisting of or containing Nitroglycerine absorbed into any porous unexplosive substance.

Notice is hereby further given, that any person infringing such Patent, or in any way Importing, Purchasing, Selling, Dealing in or Using any Lithofracteur or any other compound consisting of or containing Nitroglycerine absorbed into any porous unexplosive substance will, immediately upon such fact coming to the knowledge of the plaintiff companies or their agents, be proceeded against, and such relief sought as the said companies may be advised.

J. AND R. GOLE, 4, Lime-street, London, E.C.,
Solicitors to the above-named companies.

Dated this 8th day of April, 1879.

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## JAMES JULEFF AND SON,
BLACK LEAD MUFFLES AND CLAY CRUCIBLE MANUFACTURERS,
TREWIRGIE WORKS,
REDRUTH, CORNWALL.

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FOR MAIN LINE TRAFFIC, SHORT LINES COLLIERIES, CONTRACTORS, IRONWORKS, MANUFACTORIES, &c., from a superior specification, equal to their first-class Railway Engines, and specially adapted to sharp curves and heavy gradients, may always be had at a short notice from—

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NO MORE INCRUSTATION
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For testimonials and particulars, apply to—
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£5. £10. £20. £50. £100.

## ALEX. FROTHINGHAM AND CO.,
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Make INVESTMENTS in STOCKS on the NEW YORK STOCK EXCHANGE in amounts from £5 upwards, which frequently pay from five to twenty times the amount invested every thirty days.
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THIS AGENCY is prepared to make Investments in approved REAL ESTATE, MINING PROPERTIES, MINING STOCKS, &c., and to INVEST MONEY in FIRST-CLASS SECURITIES in CALIFORNIA, and the neighbouring States.

Also to AFFORD INFORMATION and ADVICE to parties abroad who may contemplate or may have already invested in Enterprises on the Pacific Coast, and to take charge of Property, and to look after the interests of absentees.

EDWARD J. JACKSON, P.O. Box 738, San Francisco, Cal.

REFERENCES:

Wm. Lane Booker, Esq., H. B. Majesty's Consul, S. F.; the Honorable Leland Stanford, Ex-Governor of California and President of the Central Pacific Railroad, S. F.; the Right Rev. Wm. Ingraham Kip, D.D., LL.D., Bishop of California; the Rev. William Vaux, Senior Chaplain U.S.A., Santa Cruz, Cal.; the Anglo-Californian Bank, San Francisco, California; the Anglo-Californian Bank, No. 3, Angel-court, Throgmorton-street, London, E.C.

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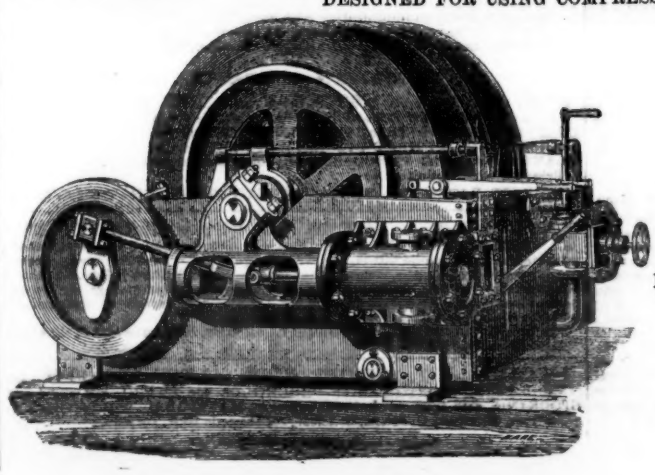

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# THE MINING SHARE LIST.

## BRITISH DIVIDEND MINES.

| Shares. | Mine | Paid. | Last wk. | Clos pr. | Total divs. | Per sh. | Last pd. |
|---|---|---|---|---|---|---|---|
| 2000 | Bryn Alyn,* l, Denbigh | 10 0 0 | — | | 0 7 0 | 0 7 0 | Jan. 1877 |
| 10000 | Caron, l, Cardigan* | 2 0 0 | 2¼ | 1¾ 2¼ | 0 4 0 | 0 2 0 | Oct. 1878 |
| 1000 | Carn Brea, c, t, Illogan†§ | 56 7 6 | 32 | 29 31 | 308 0 0 | 1 0 0 | Feb. 1874 |
| 400 | Cashwell, l, Cumberland* | 2 10 0 | — | | 1 9 6 | 0 2 0 | Aug. 1876 |
| 2450 | Cook's Kitchen, t, Illogan†§ | 25 14 9 | 2¼ | 2 2½ | 11 17 0 | 0 7 6 | Jan. 1873 |
| 240 | Devon Gt. Consols, c, Tavistock†* | 1 0 0 | 2½ | 2 2½ | 116 15 0 | 0 5 0 | July 1877 |
| 4296 | Dolcoath, c, t, Camborne | 10 14 10 | 30 | 27 29 | 113 1 3 | 0 5 0 | Nov. 1878 |
| 5000 | East Black Craig,* l, Scotland | 5 0 0 | — | | 0 10 0 | 0 10 0 | Feb. 1877 |
| 300 | East Darren,* l, Cardiganshire | 32 0 0 | — | | 235 10 0 | 1 0 0 | Aug. 1876 |
| 6400 | East Pool, t, c, Illogan | 0 9 9 | 11¼ | 10½ 11 | 16 0 3 | 0 4 0 | Apr. 1879 |
| 40000 | Glasgow Cara., c* [30,000 £1 p., 10,000 15s. p.] | | 1 | ¾ 1 | 0 13 10 | 0 0 6 | Aug. 1878 |
| 8500 | Gorsedd & Merllyn Cons., l, Flint | 2 10 0 | 3 | 2¾ 3 | 0 5 0 | 0 5 0 | Aug. 1877 |
| 15000 | Great Laxey, l, Isle of Man* | 4 0 0 | 16½ | 15 16 | 24 15 0 | 0 5 0 | Apr. 1879 |
| 615 | Gt. Retallack, l, bl, Perranzabuloe | 5 18 6 | — | | 0 1 6 | 0 1 6 | May 1876 |
| 6400 | Green Hurth, l, Durham* | 0 6 0 | 5½ | 5 5½ | 2 2 0 | 0 3 0 | Mar. 1878 |
| 20000 | Grogwinion, l, Cardigan* | 2 0 0 | 3¼ | 2¾ 3 | 0 14 10 | 0 0 10 | Aug. 1878 |
| 9880 | Gunnislake (Clitters), t, c | 5 5 0 | 1¾ | 1¼ 1¾ | 0 13 9 | 0 1 0 | Oct. 1876 |
| 60000 | Holmbush, a, c, s-l, Callington* | 1 0 0 | — | | 0 4 6 | 0 0 6 | Sept. 1876 |
| 2800 | Isle of Man, l, Isle of Man*† | 25 0 0 | — | | 82 5 0 | 0 10 0 | Feb. 1879 |
| 20000 | Leadhills,* l, Lanarkshire | 6 0 0 | 2¼ | 2 2¼ | 0 15 0 | 0 3 0 | Mar. 1878 |
| 400 | Lisburne,* l, Cardiganshire | 18 15 0 | 35 | 30 35 | 597 10 0 | 1 0 0 | Mar. 1879 |
| 9000 | Marke Valley, c, Linkinhorne | 5 3 6 | ⅞ | ⅝ ⅞ | 7 15 0 | 0 2 0 | Jan. 1876 |
| 10000 | Mellanear Copper, Hayle* | 2 0 0 | 3¼ | 3½ 3¾ | 0 8 0 | 0 3 0 | Feb. 1879 |
| 9000 | Minera Mining Co., l, Wrexham* | 5 0 0 | 10 | 9½ 10½ | 67 19 8 | 0 2 0 | Feb. 1879 |
| 20000 | Mining Co. of Ireland, cl, c, l* | 7 0 0 | — | | 23 17 6 | 0 2 6 | Jan. 1878 |
| 1024 | North Busy, c, Chacewater | 1 14 0 | — | | 1 0 0 | 0 5 0 | Oct. 1878 |
| 1289 | North Hendre, l, Wales | 2 10 0 | 6¼ | 6 6¼ | 2 17 6 | 0 5 0 | Apr. 1879 |
| 300000 | Panty Mwyn,* l, Mold (8794 iss.) | 2 0 0 | — | | 0 3 0 | 0 2 0 | Aug. 1878 |
| 6000 | Pedn-an-drea Con., t, Redruth | 0 8 6 | — | | 0 9 0 | 0 9 0 | June 1877 |
| 5000 | Penhalls, t, St. Agnes | 3 17 6 | 1¾ | 4 4½ | 3 13 6 | 0 2 0 | July 1875 |
| 6000 | Pennant, l, bar, North Wales* | 5 0 0 | 4½ | ⅞ | 0 10 0 | 0 5 0 | Mar. 1878 |
| 45793 | Penstruthal,* t, c, Gwennap | 2 0 0 | ⅛ | ¾ | 0 2 8 | 0 0 8 | Nov. 1875 |
| 18000 | Prince Patrick,* s-l, Holywel § | 1 0 0 | 1 | 1 | 0 14 0 | 0 1 3 | Jan. 1876 |
| 12000 | Ditto, pref. (8000 issued) | 0 10 0 | — | | — | — | — |
| 10000 | Red Rock,* l, Cardigan | 2 0 0 | 2 | 1½ 2 | 0 4 0 | 0 2 0 | Jan. 1878 |
| 12000 | Roman Gravels, l, Salop* | 7 10 0 | 9¼ | 8¾ 9¼ | 7 15 0 | 0 5 0 | Mar. 1878 |
| 512 | South Caradon, c, St. Cleer | 1 5 0 | 60 | 50 60 | 744 10 0 | 1 0 0 | Nov. 1878 |
| 6123 | South Condurrow, t, c, Camborne ‡ | 6 5 6 | 12½xd. | 11½ 12 | 5 7 0 | 0 10 0 | Apr. 1879 |
| 12000 | St. Harmon,* l, Montgom. | 3 0 0 | 2½ | 1½ 2½ | 0 12 0 | 0 3 0 | July 1878 |
| 10000 | So. Pr. Patrick,* s-l, (8000 sh. issued) | 1 0 0 | — | | 0 7 0 | 0 1 0 | Oct. 1875 |
| 4500 | South Wh. Frances, t, Illogan† | 7 12 4 | 10½ | 10 10¼ xd | 38 4 6 | 0 12 6 | Apr. 1879 |
| 12000 | Tankerville, l, Salop* | 6 0 0 | 3½ | 3¼ 3¾ | 4 17 0 | 0 5 0 | Dec. 1876 |
| 6000 | Tincroft, c, t, Pool, Illogan†§ | 11 10 0 | 11 | 10 10½ | 50 8 6 | 0 5 0 | May 1877 |
| 15000 | Van, l, Llanidloes* | 4 5 0 | 20½ | 19 20 | 23 10 6 | 0 5 0 | Jan. 1879 |
| 3000 | W. Chiverton, l, Perranzabuloe†§ | 15 15 0 | 4 | 3 4 | 55 10 0 | 0 10 0 | Feb. 1878 |
| 1783 | West Poldice, St. Day§ | 11 0 0 | — | | 1 19 0 | 0 4 0 | July 1876 |
| 512 | West Tolgus, c, Redruth | 95 10 0 | 30 | 25 27 | 33 0 0 | 1 0 0 | Jan. 1879 |
| 2048 | West Wheal Frances, t, Illogar § | 29 1 3 | 5¼ | 5 5½ | 3 12 6 | 0 5 0 | Oct. 1872 |
| 600 | West Wh. Seton, c, Camborne†§ | 49 0 0 | 6 | 4 6 | 446 0 0 | 0 15 0 | Apr. 1878 |
| 12000 | West WyeValley,* l, Montgom. | 3 0 0 | 1¾ | 1¼ 1¾ | 0 12 0 | 0 3 0 | Nov. 1877 |
| 1024 | Wh. Eliza Consols t, St. Austell | 18 0 0 | — | | 19 10 0 | 1 10 0 | Aug. 1878 |
| 2048 | Wheal Jane, t, Kea § | 5 13 10 | ⅛ | ¼ ⅛ | 8 5 0 | 0 5 0 | July 1875 |
| 4295 | Wheal Kitty, t, St. Agnes | 5 4 6 | ¼ | ⅛ ¼ | 11 19 6 | 0 2 6 | Dec. 1874 |
| 25000 | Wh. Newton, a, c, s, t, Calstock* | 1 0 0 | — | | 0 8 6 | 0 4 0 | Sept. 1877 |
| 80 | Wheal Owles, t, St. Just§ | 173 15 0 | — | | 522 10 0 | 4 0 0 | Aug. 1872 |
| 3000 | Wheal Peevor, t, Redruth | 7 11 0 | 9¾ | 9 9½ | 1 2 6 | 0 7 6 | Mar. 1879 |
| 6000 | Wheal Prussia, t, Redruth | 0 5 0 | — | | 0 4 0 | 0 1 0 | July 1877 |
| 10000 | Wye Valley, l, Montgomery* | 3 0 0 | 1¾ | 1¼ 1¾ | 0 10 6 | 0 4 6 | Oct. 1876 |

## FOREIGN DIVIDEND MINES.

| Shares | Mine | Paid | Last wk. | Clos pr. | Total divs. | Per sh. | Last pd. |
|---|---|---|---|---|---|---|---|
| 35500 | Alamillos, l, Spain*† | 2 0 0 | 1½ | 1 1½ | 1 19 9 | 0 0 6 | Oct. 1878 |
| 80000 | Almada and Tirito Consol., s*† | 1 0 0 | ¼ | ⅛ ¼ | 0 6 3 | 0 1 0 | May 1876 |
| 20000 | Australian, c, South Australia† | 7 7 6 | 1¾ | 1¼ 1¾ | 1 1 6 | 0 2 0 | July 1878 |
| 10000 | Battle Mountain,* c, (6240 part pd.) | 5 0 0 | — | | 0 10 0 | 0 10 0 | Nov. 1872 |
| 15000 | Birdseye Creek, g, California* | 4 0 0 | ⅝ | ⅜ ⅝ | 0 14 0 | 0 2 6 | June 1874 |
| 20000 | Cape Copper Mining,*† So. Africa | 7 0 0 | 29 | 28 29 | 33 2 6 | 0 17 6 | Dec. 1878 |
| 34433 | Cedar Creek, g, California* | 5 0 0 | ⅜ | ⅛ ⅜ | 0 5 0 | 0 2 6 | June 1873 |
| 35000 | Cesena Sul. Co., Romanga, Italy* | 10 0 0 | — | | 0 18 0 | 0 2 0 | Aug. 1878 |
| 15000 | Chicago, s, Utah* | 10 0 0 | ¾ | ¼ ¾ | 2 8 0 | 0 4 0 | Nov. 1876 |
| 65000 | Colorado United, s-l, Colorado*† | 5 0 0 | 2⅛ | 1⅛ 2⅛ | 0 13 6 | 0 4 0 | Jan. 1875 |
| 10000 | Copiapo, c, Chili* (£20 shares) | 16 15 0 | — | | 7 11 5 | 0 3 0 | May 1877 |
| 100000 | Don Pedro North del Rey*† | 0 18 0 | ⅞ | ¾ ⅞ | 2 5 9 | 0 2 0 | Mar. 1872 |
| 23500 | Eberhardt & Aurora, s, Nevada*† | 10 0 0 | 4½ | 4 4½ | 1 8 0 | 0 3 0 | Dec. 1877 |
| 70000 | English & Australian, c† S. Aust. | 2 10 0 | 1⅜ | 1⅛ 1⅜ | 2 16 9 | 0 1 0 | Mar. 1878 |
| 30600 | Flagstaff, s, Utah* | 10 0 0 | ¼ | ⅛ ¼ | 4 2 0 | 0 5 0 | July 1873 |
| 25000 | Fortuna, l, Spain*† | 2 0 0 | 4¼ | 3¾ 4¼ | 7 4 11 | 0 1 9 | Apr. 1879 |
| 55000 | Frontino & Bolivia, g, New Gran.*† | 2 0 0 | 2⅛ | 2⅛ 2⅜ | 0 2 6 | 0 1 6 | Sept. 1878 |
| 30000 | Gold Run, hyd. | 1 0 0 | — | | 0 2 4 | 0 0 4 | Oct. 1872 |
| 100000 | Hercules and Roe, s, Colo., fy. pd. | 2 0 0 | — | | 2 8 0 | 2 8 0 | Jan. 1876 |
| 68000 | Kapunda Mining Co. Australia† | 1 3 0 | — | | 0 2 4 | 0 0 6 | June 1873 |
| 20000 | Last Chance, s,* Utah | 5 0 0 | ⅝ | ⅜ ⅝ | 0 14 0 | 0 2 0 | July 1873 |
| 15000 | Linares, l, Spain*† | 3 0 0 | 4¼ | 3¾ 4¼ | 17 12 10 | 0 2 6 | Apr. 1879 |
| 65000 | London and California, g*† | 2 0 0 | ⅜ | ⅜ ⅜ | 0 1 0 | 0 1 0 | July 1875 |
| 7837 | Lusitanian, Portugal*† (£5 sh.) | 3 10 0 | — | | 1 11 6 | 0 1 6 | Mar. 1873 |
| 5000 | Mamm. Copperopolis of Utah, c, s | 10 0 0 | — | | 0 5 0 | 0 5 0 | Dec. 1872 |
| 5000 | Mountain Chief, s, Utah* | 10 0 0 | — | | 0 4 0 | 0 4 0 | Jan. 1873 |
| 10000 | Pontgibaud, s-l, France† | 20 0 0 | 21 | 19 21 | 26 19 8 | 0 19 9 | Dec. 1878 |
| 100000 | Port Phillip, g, Clunes*† (£2 sh.) | 1 0 0 | ⅝ | ⅛ ⅝ | 1 12 0 | 0 1 0 | Mar. 1879 |
| 54000 | Richmond Consols, s, Nevada*† | 5 0 0 | 9¼ | 8½ 9 | 7 1 6 | 0 10 0 | Feb. 1879 |
| 40000 | Santa Barbara,* g, Brazil | 0 10 0 | 2⅜ | 2¼ 2¼ | 0 7 3 | 0 1 6 | May 1879 |
| 120000 | Scottish Australian Mining Co.*† | 1 0 0 | 1⅞ | 1⅜ 1⅞ | 15 per cent. | | Nov. 1878 |
| 80000 | Scottish Austral. Mining Co., New | 0 10 0 | ⅞ | ¾ ⅞ | 15 per cent. | | Nov. 1878 |
| 122500 | Sierra Buttes, g, California*† | 2 0 0 | 2¼ | 2 2¼ | 2 0 6 | 0 1 6 | Apr. 1879 |
| 140625 | S. B. Plumas Eureka | 3 0 0 | 3⅛ | 2⅞ 3⅛ | 2 1 0 | 0 3 0 | Oct. 1878 |
| £253000 | St. John del Rey*† (£5 stock & multiples dealt in) | | | 270 280 | ½ year. 15 p. ct. for Dec. 1878 | | |
| 20000 | Tolima, g, s* So. America | 5 0 0 | — | | 0 11 6 | 0 6 6 | May 1874 |
| 25000 | Victoria (London)*, g, Australia | 1 0 0 | ⅜ | ¼ ⅜ | 0 12 6 | 0 0 7½ | Jan. 1878 |
| 15000 | Western Andes, s,* New Granada | 5 0 0 | — | | 0 12 0 | 0 12 0 | July 1876 |
| 21000 | W. Prussian (5500 pref. sh. 10l. pd) | 10 0 0 | 10½ | 10 10½ | 1 10 0 | 0 4 0 | Jan. 1879 |

## NON-DIVIDEND FOREIGN MINES.

| Shares | Mines. | Paid. | Last Pr. | Clos. Pr. | Last Call. |
|---|---|---|---|---|---|
| 12000 | Argentine, g, Argentine Republic | 5 0 0 | ⅛ | ¼ ⅛ | Fully pd |
| 80000 | Blue Tent, hyd., California | 5 0 0 | 2⅛ | 2 2⅛ | Fully pd. |
| 10000 | Buena Ventura,* l, Llano de las Infantas, Spain (£2 sh.) | 0 10 0 | — | | Mar. 1879 |
| 15000 | Canada,* g, Canada | 1 0 0 | 1⅜ | 2 2⅛ | Fully pd. |
| 49935 | Chontales, g, s, Nicaragua*† | 2 0 0 | ⅝ | ⅜ ⅝ | Fully pd. |
| 75000 | Colombian Hydraulic, g, Colombia | 1 0 0 | — | | Fully pd. |
| 16000 | Condes of Chili, s-l | 5 0 0 | — | | Fully pd. |
| 20000 | English Australian, g, Victoria* | 1 0 0 | ¾ | ⅛ ¾ | Fully pd. |
| 35000 | Excelsior Hydraulic Gold Washing Co., California* | 6 0 0 | — | | Dec. 1871 |
| 100000 | Exchequer, g, s, California*† | 1 0 0 | 4s. | 2s. 4s. | Fully pd |
| 100000 | Frontenac,* l, Ontario Canada | 1 0 0 | — | | Fully pd |
| 40000 | Holcombe Valley, g,* California | 1 0 0 | — | | Fully pd |
| 8000 | Hornachos,* s-l, Spain | 10 0 0 | — | | Fully pd. |
| 12000 | Hultafall,* l, bl, Orebro, Sweden | 5 0 0 | 3 | 2⅛ 2¼ | Fully pd. |
| 12000 | Hunter Consolidated, s-l, Utah | 10 0 0 | — | | Fully pd. |
| 20000 | Imperial Brazilian Collieries, Brazil* | 5 0 0 | — | | Fully pd. |
| 7500 | Isabelle, g, s*, California (£20 shares) | 5 0 0 | — | | Oct. 1878 |
| 100000 | I. X. L., g, s, California* | 1 0 0 | ¼ | ⅛ ¼ | Fully pd |
| 50000 | Javali, g, Nicaragua* | 2 0 0 | ¼ | ⅛ | Fully pd |
| 3500 | La Manche, l, Newfoundland | 10 0 0 | — | | Fully pd. |
| 12000 | Lanestosa,* l, z, Viscaya, Spain (£2 shares) | 1 15 0 | — | | Mar. 1876 |
| 12000 | Menzenberg, c, Honnef, Germany* | 5 5 0 | — | | Fully pd. |
| 4588 | New Bensberg, i, l, Germany | 5 0 0 | — | | Nov. 1876 |
| 66000 | New Quebrada, c, Venezuela* | 5 0 0 | 1⅞ | 1⅜ 1⅞ | Fully pd. |
| 20000 | New Zealand Kapanga, g, Coromandel* | 5 0 0 | ⅝ | ⅜ ⅝ | Fully pd. |
| 3000 | Oregon,* g, Oregon, U.S. (preference shares | 4 0 0 | — | | Fully pd. |
| 60000 | Panulcillo, c, Chili*† (£60000 debentures | 4 0 0 | 1¼ | ¾ 1¼ | Fully pd. |
| 90000 | Pestarena United, g, Italy*† | 3 0 0 | 4s. | 2s. 3s. | Fully pd. |
| 25000 | Pitanqui,* g, Brazil (incl. 6000 sh. £1 fully paid) | 0 5 0 | ⅜ | ¼ ⅜ | Aug. 1878 |
| 25000 | Placerville,* g q, California | 2 0 0 | 2⅛ | 2⅛ 2⅜ | Fully pd. |
| 50000 | Providencia and New Rosario, s, Mexico* | 1 0 0 | — | | Fully pd. |
| 40000 | Ravenscliff, g, New Zealand; c, South Australia | 0 5 0 | ¼ | ¼ | July 1878 |
| £2,181,000 | Rio Tinto,* c, Huelva, Spain | Stock | 65 | 65 67 | Fully pd. |
| 100000 | Rossa Grande, g, Brazil*† (£1 shares) | 1 0 0 | 3s. | 1s. 3s. | Fully pd. |
| 30040 | Russia Copper, Orenburg and Ufa*† | 10 0 0 | — | | Fully pd |
| 32000 | Sentein,* l, Ariège, France | 1 0 0 | — | | Fully pd. |
| 10000 | Silver Plume, s, Colorado* | 1 0 0 | — | | Fully pd. |
| 30000 | Tecoma, s, Utah* | 10 0 0 | ⅝ | ⅜ ⅝ | Fully pd. |
| 43174 | United Mexican, s, Mexico*†‡ | 29 0 3 | 4 | 3½ 4 | May 1878 |
| 14000 | Utah, g, s-l, Utah* | 5 0 0 | — | | Fully pd. |
| 50000 | Virneberg, c Rheinbreitbach, Germany* | 2 0 0 | — | | Fully pd. |
| 15000 | Yorke Peninsula, c, South Australia | 1 0 0 | 4s. | 2s. 4s. | Fully pd. |
| 54808 | Yorke Peninsula, c, South Australia Preference | 1 0 0 | ⅛ | ¼ ⅛ | Fully pd. |

§ Have made calls since last dividend was paid.

## FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

| | Closing Prices | |
|---|---|---|
| Argentine, 1868 6 per cent. | 73 | 75 |
| Bolivia, 6 per cent. Bond Com. Cert. | 18 | 20 |
| Brazilian, 1865, 5 per cent. | 89 | 91 |
| Chilian, 1866, 7 per cent. | 74 | 78 |
| City of Providence, 5 p.c. coupon bnds | 101 | 103 |
| Egyptian, Gov. preference | 62½ | 63 |
| Do., unified debt, scrip | 45¼ | 45¾ |
| Do., 7 per cent., V.M.L. | 63 | 69 |
| Do., 9 per cent. guar. | | — |
| Do., K. Daira Sanieh | 48 | 49 |
| Foreign and Col. Gov. Trust, 6 p. ct. | 64 | 69 |
| Do., 5 per cent., 2d issue | 48 | 53 |
| Do., 6 per cent., 3d issue | 64 | 69 |
| Do., 1872, 4th issue | 59 | 63 |
| Do., 1873, 5th issue | 59 | 63 |
| Peruvian, 1870, 6 per cent. | 13 | 13¾ |
| Do., 1872, 5 per cent | 10¾ | 11¼ |
| Russian, 5½ per cent. L. Mort. | | — |
| Spanish, Quicksilver Mort., 5 p. ct. | 100 | 102 |
| United States Mort. 6 per cent. | 104 | 106 |

## NON-DIVIDEND MINES.

| Shares. | Mine | Paid. | Last wk. | Clos. pr. |
|---|---|---|---|---|
| 40000 | Aberdaunant, l, Llanidloes* | 1 0 0 | ¼ | ⅛ ¼ |
| 2560 | Aberllyn,* l, bl, Carnarvon | 10 0 0 | 12 | 10 12 |
| 10000 | Aberystwith,* s-l, Cardigan | 5 0 0 | — | |
| 80 | Albion, i, Cornwall | 100 0 0 | — | |
| 12000 | Assheton, l, Carnarvonshire* | 5 0 0 | 1 | ¾ 1 |
| 50000 | Ballycummisk,* c, Schull | 2 0 0 | — | |
| 12000 | Bedford Unit.,* c, Tavist. (1l. liab.) | 0 1 0 | ⅜ | ⅛ ⅜ |
| 12000 | Bell Vean, t, c, Gwennap | 2 0 0 | 2 | 1½ 2 |
| 30000 | Bettws-y-Coed,* l (20,000 issued) | 1 0 0 | 1¼ | 1 1¼ |
| 8000 | Blaen Caelan,* l, Cardigan | 3 0 0 | — | 3½ 3¾ |
| 3937 | Blue Hills, t, c, St. Agnes | 4 6 6 | ¾ | ½ ¾ |
| 30000 | Bodidris,* l, bl, Denbighshire | 1 0 0 | 1⅛ | 1⅛ 1⅜ |
| 1000 | Bollihope Vale,* s-l, Durham | 5 0 0 | — | |
| 200 | Botallack, t, c, St. Just‡ | 123 15 0 | 17½ | 15 17½ |
| 2000 | Bowden Hill,* mn | 1 0 0 | — | |
| 6000 | Bradwell Moss Rake | 1 0 0 | 1 | ⅞ 1 |
| 10 00 | British,* s-l, Wrexham | 2 0 0 | 3 | 2 3 |
| 256 | Browngelly, c, St. Neot | 0 10 0 | ⅜ | ¼ ⅜ |
| 50000 | Cambrian,* s-l, c, Cardiganshire | 2 0 0 | 2¼ | 2 2¼ |
| 20000 | Central Foxdale, l, I. of Man* (2l. sh.) | 1 5 0 | — | |
| 10000 | Central Van,* l, bl, Llanidloes | 5 0 0 | — | |
| 5120 | Clementina, l, Llanrwst* | 1 0 0 | 1¼ | 1 1¼ |
| 7500 | Combellack,* t, Wendron | 2 0 0 | — | |
| 6000 | Combmartin, s-l, North Devon | 0 7 0 | ⅛ | ⅛ |
| 14000 | Crosswood Mining Lands, l.* | 1 0 0 | 2 | 1½ 2 |
| 15000 | Cwm Brwyno,* l, Cardigan | 2 0 0 | 2⅛ | 2 2⅛ |
| 15000 | Cwm Dwyfor,* c, s-l, Wales | 1 0 0 | — | |
| 5000 | Ditto, 12½ per cent. pref. | 1 0 0 | — | |
| 3000 | Cwmystwith* (New), l, Cardigansh. | 5 0 0 | — | |
| 1280 | D'Eresby Cons., l, bl, Carnarvon | 10 0 0 | 8 | 6 8 |
| 1024 | D'Eresby Mountain, l, bl, Llanrwst | 20 0 0 | 40 | 30 40 |
| 20000 | Denbighshire Consolidated, l* | 3 0 0 | 1⅛ | 1¼ 1⅛ |
| 12000 | Derwent,* l, Durham | 4 0 0 | ¾ | ½ ¾ |
| 10000 | Dubby Syke, l, Durham* | 0 15 0 | 4s. | 4s. |
| 6144 | East Caradon, c, St. Cleer‡ | 3 2 0 | ⅜ | ¼ ⅜ |
| 4000 | East Chiverton, l, Perranzabuloe | 7 7 6 | 1¼ | 1 1¼ |
| 3000 | East Craven Moor*, l, Pateley Bdge | 10 0 0 | 10 | 8 10 |
| 6000 | East Goginan, l, Cardigan | 2 0 0 | — | |
| 30000 | East Roman Gravels,* l, Salop | 1 0 0 | — | |
| 18000 | East Van, l, Llanidloes* | 5 0 0 | 2 | 1¾ 2 |
| 1722 | East Wh. Lovell, t, Helston | 9 16 0 | ⅛ | ¼ ⅛ |
| 20000 | Elgar,* s-l, Cardiganshire | 1 0 0 | — | |
| 12500 | Frongoch, l, Cardigan (11000 issued) | 2 0 0 | 2½ | 2 2½ |
| 10000 | Frosterley,* l, Durham | 1 0 0 | — | |
| 3950 | Gawton, c, Tavistock | 4 5 6 | ¼ | ⅛ ¼ |
| 12000 | Glan Clwyd,* l, Gwyddelwern | 1 0 0 | — | |
| 14000 | Glenroy,* s-l, Isle of Man | 4 5 0 | ⅝ | ⅜ ⅝ |
| 10000 | Glyn,* l, Llanidloes | 2 0 0 | ⅝ | ½ ⅝ |
| 12000 | Goginan, & Lvl. Newydd, s-l, Card.* | 2 10 0 | — | |
| 20000 | Goreu,* s-l, Carmarthen | 1 0 0 | 1 | ¾ 1 |
| 20000 | Great Dyliffe*, s-l., Montgomery | 1 0 0 | 1 | 1 1⅛ |
| 20000 | Gt. E. Foxdale, l, I. of Man (1l. sh) | 0 18 0 | — | |
| 12000 | Great Holway,* l, Flintshire | 5 0 0 | 5 | 4 5 |
| 9500 | Great Pant-y-Pydew, l, Holywell | 2 0 0 | — | |
| 6000 | Gt. Wheal Eleanor, t, North Bovey | 1 17 6 | ⅜ | ¼ ⅜ |
| 6000 | Great Wheal Rodd,* s-l, Cornwall | 0 10 0 | 1 | ¾ 1 |
| 10000 | Gwern-y-Mynydd*, s-l | 5 0 0 | 4 | 4 4¼ |
| 10000 | Harehope Gill,* l, Durham (£1 sh.) | 0 5 0 | — | |
| 1200 | Hartington Moor,* carb. l, Derby | 1 0 0 | 2 | 1½ 2 |
| 6400 | Harwood,* l, Durham | 0 15 0 | 1s. 6d | 1s 6d. |
| 3000 | Herodsfoot, l, near Liskeard† | 1 0 0 | 3½ | 3 3½ |
| [illegible] | Hingston Down, c, Calstock*† | 0 6 0 | ⅜ | ⅛ ⅜ |
| 5000 | Hush Elsteddfod Minera,* l | 2 0 0 | — | |
| 2500 | Killaloe, sl, Tipperary‡ | 1 0 0 | — | |
| 6000 | Killifreth, t, Chacewater | 2 12 6 | 1⅜ | 1¼ 1⅜ |
| 25000 | Kingston Con., s-l, Stoke Climsland | 1 0 0 | — | |
| | Ditto, preference | 1 0 0 | 1⅛ | 1 1⅛ |
| 12000 | Ladywell,* l, Salop | 2 10 0 | ¼ | ⅛ ¼ |
| 12000 | Ditto, 10 per cent. pref., 1l. each | 0 10 0 | ⅜ | ⅜ ⅜ |
| 5000 | Lead Era,* l, Mold | 2 10 0 | 3¼ | 2¾ 3¼ |
| 2500 | Levant, c, t, St. Just | 10 14 6 | — | |
| 6000 | Livingstone Consols, t, St. Agnes | 0 10 0 | ½ | ⅛ |
| 10000 | Lomax, s-l, Perranzabuloe | 1 0 0 | 1¼ | 1 1¼ |
| 5120 | Lovell, t, Wendron | 0 16 0 | 2 | 1½ 2 |
| 25000 | Llanrhaiadr, l, Montgomery* | 2 0 0 | — | |
| 30000 | Llanrwst,* l, Carnarvon | 2 0 0 | 2 | 1 2 |
| 1800 | Mawston,* l, South Wales | 1 0 0 | 2 | 1½ 2 |
| 6000 | Medlyn Moor, t, Wendron | 2 9 10 | — | |
| [illegible] | Melyndwr, l, Cardigan* | 3 0 0 | 1¼ | ¾ 1¼ |
| 7000 | Mid Devon Copper* | 0 6 8 | 1¼ | 1 1¼ |
| 21000 | Ditto | 0 2 6 | 1 | ¾ 1 |
| 8000 | Mineral Corp. of Great Britain* | 10 0 0 | 11 | 10 11 |
| 11000 | Monydd Gorddu, l, Cardigan* (Red.) | 5 0 0 | 2¾ | 3 5 |
| 12000 | Morfa Du, z, g, s, Anglesea* | 1 0 0 | 1 | ⅞ 1 |
| 25000 | Nant-y-Ronen, s-l, Cardigan* | 1 0 0 | — | |
| 15000 | Nascent Copper* | 1 0 0 | — | |
| 4768 | New Bronfloyd,* ., Cardigan (5l. sh.) | 3 16 0 | 3 | 2¼ 3 |
| 8000 | New Dolcoath, t, c, Camborne* | 3 0 0 | 1¼ | 1⅛ 1¼ |
| 20000 | New East Foxdale, s-l, Isle of Man | 0 15 0 | — | |
| 1492 | New Hendra, t, Breage | 3 9 0 | — | |
| 3500 | New Tincroft,* t, Lelant | 6 0 0 | 3 | 2½ 3 |
| 4000 | North Cornwall,* l, Cornwall‡ | 5 0 0 | 5 | 5 |
| 30000 | North Laxey,* Isle of Man | 1 0 0 | 4s. | 2s. 4s. |
| 2000 | North Levant, t, c, St. Just‡ | 12 16 0 | 1 | ¾ 1 |
| 50000 | North Molton, c, mn, i, Devon | 1 0 0 | 1 | 1 |
| 5936 | North Treskerby, c, St. Agnes | 8 17 10 | — | |
| 6400 | Oola Hills,* s-l, Limerick | 5 0 0 | — | |
| 12000 | Pandora,* l, Carnarvon | 2 0 0 | ½ | ⅜ ½ |
| 6000 | Park Valley,* s-l, North Devon | 0 4 0 | ¼ | ⅛ ¼ |
| 6000 | Parracombe, s-l, Devon | 0 5 0 | ⅛ | ⅛ |
| 16923 | Parys Corporation,* c, Anglesea | 3 0 0 | ⅝ | ½ ⅝ |
| 12000 | Phœnix, & W. Phœnix, t, c, Link.§ | 5 10 3 | — | |
| 4000 | Pateley Bridge, l, Yorkshire | 5 0 0 | 1⅛ | ⅞ 1⅛ |
| 7000 | Picton,* s-l, Holywell, fully paid | 1 0 0 | 1 | ¾ 1 |
| 12000 | Plynlimmon, l, Llanidloes* | 2 0 0 | 6s. | 4s. 6s. |
| 10000 | Port Nigel,* s-l, Carnarvonshire | 2 0 0 | ½ | ¼ ½ |
| 2000 | Prideaux Wood, t, Llanivery | 5 0 0 | — | |
| 5182 | Prince of Wales, c, Calstock‡ | 2 8 0 | 6d. | 6d. |
| 6000 | Relistian Consols, c, Gwinear | 0 10 0 | ¼ | ⅛ ¼ |
| 5000 | Rhydalun,* l, Mold | 10 0 0 | 11 | 10 11 |
| 15000 | Rookhope, l, Durham* | 1 10 0 | ¼ | ⅛ ¼ |
| 4200 | Snowbrook, s-l, Montgomery | 5 0 0 | — | |
| [illegible] | So. Cwmystwith, l, Cardiganshire | 2 0 0 | 3 | 2 3 |
| [illegible] | South Darren, l, Cardigan* | 1 10 0 | 1¾ | 1⅛ 1¾ |
| 30000 | South de Eresby Mountain, | 1 0 0 | 1½ | 1¼ 1½ |
| 6000 | So. Devon United Copper* | 1 0 0 | 1 | ¾ 1 |
| 512 | South Dolcoath, c, t, Redruth | 12 5 0 | — | |
| 5000 | So. Molton Cons., s-l, No. Devon | 0 3 6 | — | |
| 18000 | South Roman Gravels, l* | 1 10 0 | 3s. | 1s. 3s. |
| 6000 | South Roskear, t, c, Camborne | 8 5 0 | — | |
| 6000 | South Tolcarne, t, c, Camborne | 2 5 6 | ¾ | ½ ¾ |
| 937 | South Wheal Crofty, c, Illogan | 45 10 10 | 7½ | 7 7½ |
| 12000 | Steddfa,* l, Cardigan | 1 0 0 | 1¼ | 1 1¼ |
| 6000 | St. Lawrence, Amal., l, Flintshire* | 2 0 0 | — | |
| 10000 | St. Patrick, l, Halkin, Holywell* | 1 0 0 | 1¼ | 1 1¼ |
| 6000 | Success, &c., l, Derb. (12,000l. called) | 1 0 0 | — | |
| 16000 | Sunnyside,* l, Durham | 2 0 0 | — | |
| 30000 | Talybont,* s-l, Cardiganshire | 1 0 0 | — | |
| 40000 | Tamar, s-l, Bearalston* | 1 0 0 | 1⅜ | 1¼ 1⅜ |
| 6400 | Teesdale,* l, Durham | 1 0 0 | 1 | 1 1⅛ |
| 14000 | Teign Valley, l, bar., Bridford | 1 0 0 | — | |
| 10000 | Temple, l, Cardigan* | 1 0 0 | — | |
| 10000 | Tolgus Consols,* c, Redruth | 5 0 0 | 3½ | 3 3½ |
| 5000 | Treleigh Wood, t, Redruth | 6 1 0 | — | |
| 12000 | Trethellan, s-l, Crantock* | 2 0 0 | — | |
| 640 | Truro*, l, Nerquis, Flintshire | 10 0 0 | — | |
| 5000 | Tyn-y-Fron,* l, Cardigan | 1 0 0 | 1 | ¾ 1 |
| 5000 | Ditto | 0 5 0 | ¼ | ⅛ ¼ |
| 1000 | Vaughan*, l., Cardiganshire | 10 0 0 | — | |
| 18000 | Victor,* l, Flintshire (£1 share) | 0 5 0 | — | |
| 12000 | West Assheton, l, Carnarvon | 1 0 0 | 1⅜ | 1¼ 1⅜ |
| 6000 | West Basset, c, Illogan†‡ | 6 13 4 | 5 | 4½ 5 |
| 5500 | West Combmartin, s-l, North Devon | 1 0 0 | — | |
| 7000 | Ditto | 0 2 6 | — | |
| 3000 | W. Craven Moor, l, Pateley Bridge* | 10 0 0 | 9 | 7 9 |
| 12000 | West Goginan,* Cardiganshire | 2 0 0 | ⅜ | ⅛ ⅜ |
| 10000 | West Llangynog, s-l, Montgomery | 2 0 0 | — | |
| 3000 | West Mary Ann, l, Menheniot | 9 12 6 | ¾ | ½ ¾ |
| 50000 | West Milwr, s-l, Flint | 1 0 0 | — | |
| 20000 | W. of Englnd. Spat. Iron & Ld. Smelt. | 5 0 0 | 5 | 5 |
| 20000 | West Pateley Bridge,* l, Yorkshire | 1 0 0 | 2¼ | 2 2¼ |
| 1000 | West Roskear, t, s-l, bl, c, Camborne | 5 10 0 | — | |
| 10000 | West Vor,* t, c, ars, Breage | 1 0 0 | — | |
| 3000 | West Wheal Peevor, t, Redruth | 1 0 0 | 3 | 2½ 3 |
| 6000 | Wheal Agar, c, Illogan | 12 10 0 | 4 | 3½ 4 |
| 512 | Wheal Basset, c, Illogan‡ | 33 2 6 | 1⅛ | 1 1⅛ |
| 6000 | Wheal Coates, t, St. Agnes | 2 0 0 | — | |
| 2635 | Wheal Comfort, c, Gwennap | 1 7 0 | — | |
| 6000 | Wheal Crebor, c, Tavistock | 4 6 0 | ⅜ | ⅛ ¼ |
| 5179 | Wheal Grenville, c, Camborne | 4 10 0 | 3½ | 3¼ 3½ |
| 12000 | Wheal Russell, c, Tavistock | 2 1 6 | — | |
| 1000 | Wheal Sisters, t, Lelant | 14 0 0 | 11 | 10 11 |
| 4096 | Wheal Uny, t, c, Redruth | 14 8 6 | ⅝ | ⅜ ⅝ |
| 2324 | White Cliff,* l, Llanrwst | 5 0 0 | — | |
| 5000 | Wicklow, c, sul, i, Wicklow | 2 10 0 | — | |

b, blende; cl, coal; c, copper; g, gold; l, lead; s, silver; sl, slate; s-l, silver-lead; t, tin; z, zinc.

* Limited Liability Companies; † quoted on the Stock Exchange; ‡ have paid dividends.

## IRON AND COAL COMPANIES.

| Shares. | Company. | Paid. | Prices. | | |
|---|---|---|---|---|---|
| £100 | Abbot, John, and Co. [L.] | £75 0 0 | 35 | 30 | dis |
| 15 | Albion Steel and Wire Co. [L.] | 14 0 0 | | — | |
| 5 | Alltami Colliery Co. [L.] | 5 0 0 | 2½ | 3 | |
| 100 | Ashbury Co. [L.] | 90 0 0 | 60 | 55 | dis. |
| 3 | Bagnall, John, and Sons [L.] | 3 0 0 | ⅝ | ⅞ | |
| 10 | Benhar Coal Co. [L.] | 10 0 0 | ⅛ | ¾ | |
| 10 | Bilbao Iron Ore Co. [L.] | 50 0 0 | 18 | 20 | |
| 50 | Bilson & Crump Meadow Coll. Co. [L.] | 10 0 0 | 1½ | 2 | |
| 4 | Blaen Cwmbach Coal Co. [L.] | 4 0 0 | | | |
| 50 | Blaenavon Iron and Steel Co. [L.] | 50 0 0 | | — | |
| 100 | Bolckow, Vaughan, and Co. [L.]...A | 50 0 0 | 7 | 7½ | pm |
| 50 | Bowling Iron Co. [L.] | 50 0 0 | | — | |
| 50 | Britannia Ironworks [L.] | 25 0 0 | | — | |
| 50 | Brown, Bailey, and Dixon [L.] | 40 0 0 | 10 | 9 | dis. |
| 100 | Brown, John, and Co. [L.] | 70 0 0 | 26 | 24 | dis |
| 3 | Oakemore, Cseway. Grn., &c., ord. sh. | 3 0 0 | 3⅛ | 3¼ | |
| 3 | Ditto (7½ per cent. pref. shares) | 3 0 0 | | 3¼ | |
| 100 | Cammell and Co. [L.] | 80 0 0 | 18 | 17 | dis. |
| 20 | Cannock and Huntington Coal [L.] | 10 0 0 | 9 | 8¼ | dis. |
| 10 | Cardiff & Swansea St. Coal Co. [L.] | 9 0 0 | ⅞ | 1⅛ | |
| 10 | Cardigan Steel and Wire Co. [L.] | 8 10 0 | | — | |
| 10 | Central Swedish Iron and Steel [L.] | 10 0 0 | 1 | 2 | |
| 5 | Chapel House Colliery | 5 0 0 | 1 | 1⅛ | |
| 50 | Charlton Iron Co. [L.] | 50 0 0 | 8 | 10 | |
| 50 | Chatterley Iron Co. [L.] | 45 0 0 | 41 | 39 | dis. |
| 10 | Chillington Iron Co. [L.] | 10 0 0 | 1¾ | 2¼ | |
| 10 | Consett Iron Co. [L.] | 7 10 0 | 8½ | 9 | pm. |
| 1 | Consett Spanish Ore [L.] | 1 0 0 | ¼ | ⅛ | dis. |
| 50 | Cooke, William, and Co. [L.] | 45 0 0 | 45 | 43 | dis. |
| 20 | Darlington Iron Co. [L.] | 12 10 0 | ⅛ | ¼ | |
| 50 | Davy Brothers [L.] | 22 10 0 | ⅛ | ¼ | dis |
| 5 | Diamond Fuel Co. [L.] | 5 0 0 | | — | |
| 23 | Ebbw Vale Co. [L.] | 20 0 0 | 17 | 16 | dis. |
| 100 | Fox, Samuel, and Co. [L.] | 80 0 0 | 25 | 30 | |
| 10 | General Mining Ass. [L.] (£1 returned) | 9 0 0 | 4 | 5 | |
| 5 | Great Western Coal Co. [L.] | 5 0 0 | | — | |
| 2 | Gwyngwillim Colliery Co. [L.] | 2 0 0 | | — | |
| 15 | Hopkins, Gilkes, and Co. [L.] | 12 0 0 | 11½ | 11 | dis. |
| 50 | Knowles, Andrew, and Sons [L.] | 17 0 0 | 10 | 9 | dis. |
| 10 | Llay Hall Coal, Iron, & Firebrick [L.] | 10 0 0 | 5 | 4 | dis. |
| 5 | Littledean Woodside Coll. Co. [L.] | 5 0 0 | | — | |
| 50 | Llynvi, Ogmore, & Tondu Co. [L.] | 50 0 0 | 5 | 5½ | |
| 10 | Lydney and Wigpool Iron Ore [L.] | 8 5 0 | 9 | 8 | dis. |
| 10 | Marbella Iron Ore Co. [L.] | 10 0 0 | 9½ | 9 | dis |
| 6 | Mersey Steel and Iron Co. [L.] | 5 0 0 | | — | |
| 10 | Midland Iron Co. [L.] | 5 0 0 | 1½ | 1 | dis |
| 5 | Mold Argoed Colliery Co. [L.] | 5 0 0 | 4 | 3¼ | dis. |
| 10 | Monkland Iron and Coal Co. [L.] | 10 0 0 | 9½ | 9¼ | dis. |
| 4 | Mwyndy Iron Ore [L.] | 3 15 0 | 2¾ | 2¼ | dis. |
| 100 | Nant-y-Glo and Blaina (8 p.c. pref.) | 100 0 0 | 12 | 14 | |
| 3 | Nerbudda Coal and Iron [L. & Red.] | 2 0 0 | 1⅝ | 1⅜ | dis |
| 20 | New Sharlston Collieries [L.] Pref. | 20 0 0 | 2½ | 3⅜ | |
| 10 | Newport Abercarn Coal Co. [L.] | 10 0 0 | 4s. | 5s. | |
| 10 | Northmptn. Coal, Iron & Wagon [L.] | 8 0 0 | | — | |
| 10 | Northfield Iron Co. [L.] | 8 10 0 | 8¼ | 7¾ | dis. |
| 1 | Norton Green Coal Co. [L.] | 1 0 0 | | — | |
| 35 | Palmer's Shipbuilding and Iron [L.] | 25 0 0 | 15 | 14 | dis. |
| 100 | Parkgate Iron Co. [L.] | 65 0 0 | 23 | 21 | dis. |
| 20 | Patent Nut and Bolt Co. [L.] | 14 0 0 | 5½ | 6 | pm. |
| 20 | Patent Shaft and Axletree [L.] | 10 0 0 | 1 | ¾ | dis. |
| 20 | Pelsall Coal and Iron [L.] | 17 10 0 | 11 | 10 | dis. |
| 50 | Phœnix Bessemer Co. [L.] | 40 0 0 | | — | |
| 50 | Rhymney Iron Co. [L.] | 50 0 0 | 16¼ | 17½ | |
| 10 | Sandwell Park Colliery Co. [L.] | 10 0 0 | 13½ | 14½ | |
| 10 | Ditto New | 5 0 0 | 2 | 2½ | pm |
| 100 | Shotts Iron Co. [L.] | 100 0 0 | 65 | 70 | |
| 100 | Sheepbridge Iron and Coal [L.] | 70 0 0 | 47½ | 45 | dis |
| 50 | Silkstone & Dodworth Cl. & Iron [L.] | 33 0 0 | 28 | 27 | dis. |
| 20 | Skerne Ironworks [L.] | 20 0 0 | 16 | 15½ | dis |
| 50 | Somorrostro Iron Co. [L.] | 50 0 0 | | — | |
| 25 | South Wales Coal Co. [L.] | 23 0 0 | 3 | 4 | |
| 100 | Staveley Iron and Coal Co. [L.] | 60 0 0 | 7 | 5 | dis |
| 100 | Ditto ditto New | 10 0 0 | ¼ | ¼ | dis |
| 10 | Swansea Valley Steam Coll. Co. [L.] | 6 0 0 | | | |
| 100 | Thames Iron Company | 100 0 0 | | — | |
| 50 | Tredegar Iron and Coal Co. [L.] | 30 0 0 | 16 | 15 | dis |
| 25 | Ditto B. shares | 25 0 0 | 12 | 13 | |
| 20 | Ulverston Mining Co. [L.] | 14 0 0 | 7 | 5 | dis. |
| 10 | Vancouver Coal [L.] | 6 0 0 | 3½ | 2½ | dis. |
| 100 | Vickers, Sons, & Co. [L.] | 100 0 0 | 1 | 2 | pm. |
| 50 | Welsh Ironworks Co. [L.] | 50 0 0 | | — | |
| 25 | W. Cumberland I. and Steel [L.] | 20 0 0 | 15 | 13 | dis |
| 10 | West Mostyn Coal [L.] (12 p.c. pref.) | 10 0 0 | | — | |
| 5 | West Swansea Colliery Co. [L.] | 5 0 0 | | — | |
| 10 | Whitehaven Iron Co. [L.] | 10 0 0 | | — | |
| 100 | Wigan and Whiston Coal Co. [L.] | 70 0 0 | | — | |
| 100 | Wigan Coal and Iron Co. [L.] | 75 0 0 | | — | |

## WAGON COMPANIES.

| Shares | Company | Paid | Prices | | |
|---|---|---|---|---|---|
| 10 | Birmingham Wagon Co. [L.] | 10 0 0 | 12½ | 13 | |
| 10 | Ditto, 2nd issue | 4 0 0 | 1½ | 2 | pm |
| 10 | Ditto, pref., 6 per cent. | 10 0 0 | 10½ | 10¾ | |
| 20 | British Wagon Co. [L.] | 10 0 0 | 1⅛ | 1⅛ | pm |
| 10 | Gloucester [L.] | 10 0 0 | 6 | 6¼ | |
| 10 | Ditto, 5th issue | 5 0 0 | 2⅛ | 2¼ | dis |
| 10 | Met. Rail. Car. and Wagon Co. [L.] | 5 0 0 | 2 | 2¼ | pm |
| 5 | Ditto, pref., 6 per cent. | 2 0 0 | ¼ | ⅜ | pm |
| 10 | Midland | 10 0 0 | 6¼ | 7 | |
| 20 | North Central Wagon Co. | 20 0 0 | 19 | 20 | |
| 5 | Rail. Car. [L.] (Oldbury) | 5 0 0 | 1¼ | 1 | dis |
| 5 | Ditto, pref., 6 per cent. | 5 0 0 | ¼ | ¼ | dis |
| 20 | Sheffield Wagon Co. [L.] | 15 0 0 | ¼ | ½ | pm. |
| 10 | Yorkshire Wagon Co. [L.] | 10 0 0 | ¼ | ⅜ | pm |

## TELEGRAPH COMPANIES.

| Shares | Company | Paid | Prices | | |
|---|---|---|---|---|---|
| "St." | Anglo-American | 100 0 0 | 55 | 55½ | xd |
| 10 | Brazilian Submarine | 10 0 0 | 6⅝ | 6⅞ | |
| 20 | Direct United States Cable | 20 0 0 | 10¾ | 11 | |
| 10 | Eastern | 10 0 0 | 7⅛ | 7⅜ | |
| 10 | East. Exten., Australia and China | 10 0 0 | 7½ | 7¾ | |
| 10 | Great Northern | 10 0 0 | 7⅝ | 8⅛ | |
| 25 | Indo-European | 25 0 0 | 20 | 21 | |
| 10 | Mediterranean Extension | 10 0 0 | 2¾ | 3¼ | |
| 8 | Reuters | 8 0 0 | 9½ | 10½ | |
| Stk. | Submarine | 100 0 0 | 220 | 230 | |
| 10 | West India and Panama | 10 0 0 | 1½ | 1¾ | |
| 20 | Western and Brazilian | 20 0 0 | 3¾ | 4 | |
| $1000 | Western Union, 7 per cent. Mort. Bonds | $1000 | 114 | 118 | |

## MISCELLANEOUS.

| Shares | Company | Paid | Prices | | |
|---|---|---|---|---|---|
| Stk. | Atlantic and Great Western Leased Lines, Rental Trust | 100 0 0 | 58 | 60 | |
| 25 | Australian Agricultural | 21 10 0 | 92 | 94 | |
| 25 | Austral. Mort. Land and Finance [L.] | 5 0 0 | 5½ | 6 | pm |
| 10 | Avonside Engine [L.] | 7 0 0 | 8 | 7 | dis |
| Stk. | Baltimore and Ohio, 6 per cent. | 100 0 0 | 113 | 115 | |
| 10 | Brighton Aquarium [L.] | 10 0 0 | 6 | 7 | |
| Stk. | Cent. of New Jersey Con. Mort. | 100 0 0 | 89 | 91 | |
| Stk. | Cent. Pacific of Calif., 1st Mort. 6 p.c. | 100 0 0 | 114 | 115 | |
| 25 | City of London Real Property [L.] | 12 0 0 | 1½ | 2 | pm |
| 5 | Diamond Rock Boring | 4 10 0 | 3¾ | 3¼ | dis |
| 15 | English and Foreign Credit | 8 0 0 | | — | |
| 16 | Fore Street Warehouse [L.] | 14 0 0 | 6 | 7 | pm |
| 15 | Foster, Porter, and Co. [L.] | 10 10 0 | 17 | 18 | |
| 5 | Gen. Phos. & Chem. Works Co. [L.] | 5 0 0 | | — | |
| 1 | Greenhill [L.] | 1 0 0 | | — | |
| 5 | Kit Hill Tunnel [L.] | 1 0 0 | | — | |
| 17 | Hudson's Bay Company | 17 0 0 | 14¼ | 14⅝ | |
| 10 | Huntington Copper and Sul. Co. | 9 0 0 | | — | |
| Stk. | Illinois Central, $100 shares | 100 0 0 | 88 | 90 | |
| Stk. | Illinois & St. Louis Bridge, 1st Mort. | 100 0 0 | 89 | 91 | |
| Stk. | Ditto, 2nd Mort., 7 per cent. | 100 0 0 | 40 | 45 | |
| Stk. | Illinois Cent. Sinking Fund, 5 p. cent. | 100 0 0 | 102 | 104 | |
| Stk. | Ditto, 6 per cent. | 100 0 0 | 112 | 114 | |
| 7½ | Imperial Credit [L.] | 7 10 0 | 7⅜ | 7⅝ | |
| — | Ditto, Surplus Certificate | — | 6⅛ | 6¾ | |
| Stk. | Lehigh Val. Con. Mort., A, 6. p. cent. | 100 0 0 | 105 | 107 | |
| 10 | Milner's Safe [L.] | 10 0 0 | 7 | 8 | |
| 25 | National Discount [L.] | 5 0 0 | 8¼ | 8⅜ | |
| Stk. | N. Cent. Rail. Con. Mort., 6 per cent. | 10 0 0 | 90 | 92 | |
| 10 | Pawson and Co. [L.] | 8 0 0 | ¼ dis | par | |
| 50 | Peninsular and Oriental Steam | 50 0 0 | 45 | 47 | |
| Stk. | Pennsyl. Gen. Mort. 6 p. cent., 1880 | 100 0 0 | 115 | 116 | |
| Stk. | Ditto, Con. Sink. Fund, 6 p. ct., 1905 | 100 0 0 | 108 | 109 | |
| Stk. | Scottish Aust. Investment Company | 100 0 0 | 190 | 200 | |
| Stk. | Ditto, 6 per cent. Preference | 100 0 0 | [illegible] | [illegible] | |
| 20 | Suez Canal shares | 20 0 0 | | — | |
| 12 | Telegraph Construc. & Mainte. [L.] | 12 0 0 | 29¾ | 30¼ | |
| 5 | Ditto, Second Bonus Three per Cents | 5 0 0 | 2⅛ | 2⅜ | |
| 10 | Tharsis Sulphur and Copper Co. | 10 0 0 | 21 | 22 | |
| Stk. | Union Pacific Land Grant, 1st Mort. | 100 0 0 | 112 | 114 | |
| Stk. | Union Pacific Railway, 1st Mort. | 100 0 0 | 113 | 115 | |
| 5 | West of England Compressed Peat | 5 0 0 | | — | |
| 5 | Ditto | 2 0 0 | | — | |

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